

/138 cont. /

177 Since contact with the Whites was established, wars have
721 apparently declined considerably, but even today they exact a
decidedly heavy toll.

22 The Auen is at the lowest stage of human development; he
is exclusively a collector and hunter.

133 This way of life is dictated to him by the nature of his en-
137 vironment. This part of the Kalahari, where the watering places
182 are sometimes 100 kilometers apart and very limited in number,
does not permit livestock raising, especially also since the
tschama [sometimes spelled tsama, a kind of melon] enjoyed by
the cattle is comparatively rare.

133 In the Auen region the plain dominates the landscape.
Primary rocks rise up here and there only along the river banks.
So-called dunes give the landscape a gently hilly character, espe-
cially in the vicinity of the rivers (dry river beds which carry
137 water only after violent rains). The ground cover alternates be-
132 tween grass, shrub, and tree steppe and dense undergrowth. The
amount of precipitation is very small; the lack of sufficient sta-
tistical data makes it impossible to give a more precise estimate.

B. Dwellings and Furnishings

342 The typical form of the dwelling is the windscreen, in other
words, the most primitive form of human habitation, which
scarcely deserves the designation "hut." Its construction is com-
pleted in a few minutes. A few twigs are stuck loosely into the
ground at the thicker end in a semicircle and propped against
each other at the branching end. I have never seen the supports
firmly fastened to one another, although I have examined several
hundred huts. Grass is thrown on the framework, and the construc-
tion is finished. During the dry season the structures are usually
built even more hastily and sometimes consist merely of a few
bundles of grass that have been thrown loosely between the twigs
of a living bush. The entire structure is often scarcely a meter
high and has no roof. It is thus a genuine windscreen, intended to
protect its inhabitants from drafts while they are lying down.

If the settlement remains at a particular place for only a few
days, the people content themselves with the shadow of some

[17 cont.]

- 137 (Baikiaca plurijuga), which have particularly thick trunks along the banks (dunes) of the large Omurambas. Another common tree is the red bean tree (Copaifera coleosperma), the yellow-wood (Terminalia sericea), sometimes in tree form, but more commonly in bush form as underbrush. In the northern part the Greesappelboom (Parinarium mobola) appears here and there, and, individually over the entire veld, the rattle tree or the wild orange (Strychnos schumanniana) and the dolf (Therocarpus erinaceus). The dunes of the Omurambas are covered not only with mokussi, but also with camel thorn trees (Acacia giraffa), hackie bushes (Acacia detinens), and another thorn bush (Acacia spec.). Between the large Omurambas, which extend to the flood area (Kaudum and Schadum), and between the Okovanggo and the Kaudum, there is a number of sometimes recognizable, sometimes overgrown Omurambas, such as Tschakaue, Gani, and north and south of the Kaudum, Tschaudum and Kuatschadum. The island-like appearance of Hyphaena ventricosa at the watering place Tschaudum is worthy of mention, 500 to 1,000 specimens occurring as isolated trees, as in the Grootfontein plain.
- [133] In the entire region there are many hackie thorn bush islands and salt pans which have open water or water half a meter deep and are usually overgrown with reeds (Phragmites). The pasture is bad, with the exception of the Omuramba beds, which, like the Kaudum, for example, have a very high water level 20 to 50 centimeters deep. Long, hard grass or low leafy bush [Author: perhaps related to Dichopetalum venenatum (Machau), which occurs sporadically] is to be found here, whereas Bushman grass and knawel grass occur only among the thorn bushes. In the underbrush area there are species of Grewia. During the rainy season the ground is [18] covered with prickly cucumbers (Citrullus nausimorus), and onkies (Cyperus usitatus) grow under the hackie bushes. In addition, there are a great number of shrubs that bear a tasty bush crop during the rainy season. The baobab tree (Adansonia digitata), whose first representatives appear north of Dowigna in the Kaukau Veld, the morula tree (Sclerocaria schweinfurthiana), the manquetti tree (Ricinodendron rautannei), and the hartekohl tree (Combretum primigenium) are absent.
- 133 Pans of brackish water are absent; in their stead there are ef-
 135 florescences of salt at various places in the Kaudum and Schadum.

!KUNG

[18 cont.]

134 The ground is covered with red sand (fox sand), which in the thorn bush areas changes to a firm, grayish-yellow; perhaps argillaceous sand. Chalk cliffs and other rocks are completely lacking. The Kaudum bed is perpetually covered with dense green grass. The sand pans have humous sand; only in the northeast near Schamatura is a peat-like swampy soil to be found with red, strongly ferruginous water. Forest fires are the order of the day, but they do little damage to the tree growth."

● 133 South of the Omuramba u Owambo there is a fairly large

134 number of limestone pans, which in part still contain water but are mostly dried up. The land there is drying up rapidly, according to both the Bushmen and the Europeans. During the rainy season the clayey soils are swampy, and at that time the

[136] dense bush forest is filled with myriads of mosquitoes, and [164] malaria claims its victims from all races. The unhealthy situa-

648 tion, the difficulty of getting workers, and the irregularity of the rainfall have led to the abandonment of most of the farms outside Grootfontein, so that the Bushmen have actually gained ground there. The !Kung Bushmen outside the police zone live entirely according to their old customs and traditions. The in-
[578]dividual kin groups are in part hostile to one another. A kind [619] of hereditary feud exists with the Hei//om, who are often attacked because of the women. The !Kung live on good terms with the farms along the northern boundary (Duwib, Keitsas, Keibeb, Kuntsas, Neitsas, Foxhof). Many of them work there for [464] certain periods of time, and quite a few permanently; in particular, they like to let women and children work on the farms.

[177] Mr. Cleark, the owner of Keibeb, has trained a large number of them to make charcoal. These Bushmen make the charcoal out [439] in the wilderness and deliver it. It is then resold to the mottramite mine in Abenab. Until the establishment of the police zone, a perpetual state of war existed between the police and the Bushmen. There are constant battles between the Herero of Otjituo and the !Kung because of livestock thefts. The Herero attack the Bushmen on horseback and kill them from the saddle with the kirri.

The Bushmen, who are not accustomed to shooting at rapidly moving targets, usually come out the losers. Like the

[19 cont.]

162 In the age group of five to ten years, the number re-
165 mains the same.

The mortality rate is therefore very low, as among us, in fact, even lower, since the dangerous infectious diseases of childhood are absent. Insofar as the few figures given here permit one to draw conclusions, the sex ratio is 1:1. It is impossible to say what the sex ratio is among the adults. A great number

[123] of the men disappeared when I arrived -- since most of them had a bad conscience and did not want to be pinned down either metrically or photographically. It is certainly clear, however, that the higher the age group, the greater is the excess of women.

[20] Concerning the gray-haired individuals of an advanced age, in other words, over 60 years old, I counted four men and 13 women in the case of the four hordes mentioned above, in other words, a ratio of 1:3. As is the case among us, there, too, the women on the average reach a higher age.

161 C. v. François (1) on his journey to the Okovanggo in

[113]

1. Mitteilungen aus den deutschen Schutzgebieten, IV, 1891.

1891 estimated the population of the region at 500 Honigkaffir and Hei//om, 2,000 !Kung and 10,000 Okavango. The Bushman

[131] tribe of the Wassekeri was supposed to live north of the Okovanggo, between the Kuando and Cuito. He calls the chief

133 of the northern !Kung the person best acquainted with the land, and this chief assured him that the water conditions had been much better in earlier times. Many of the vleis that are now dry formerly had water the year round. The Okaluombe (Apato) is supposed to have formerly flowed into the Ngami.

Theodor Leutwein (2) reports:

[113]

2. Elf Jahre Gouverneur in Deutsch-Südwestafrika [Eleven Years as Governor in German Southwest Africa], Berlin, 1906.

648 "North of Grootfontein at Gaub, a place with ample
621 water, a number of Kaffir and Bushmen had formed a village and
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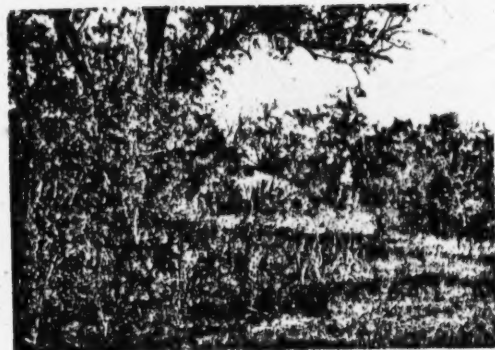
3: Lebzelter--160 E-5 (1926-1928) 1934 FX10 Bushmen FX10

!K SWG

[342]



1. !Kung Huts in the Bush Veld.



2. Summer Landscape in the !Kung Veld.



3. The Omuramba u Omatako south of Otjituo.



4. Winter Landscape in the Sand Veld.

Plate II. Landscapes on the !Kung Veld.

B /260 cont./

191 In addition to the Bushman language, the Heikum of the
 192 Omatako also speak Nama, whereas the Kung of the Kaukau
 193 Veld speak only their Bushman language. The reason for this
 is readily seen if one realizes that the Kaukau Veld is an oasis
 enclosed on all sides by the large waterless stretches of the
 Kalahari, and hence is visited only during the rainy season by
 a few Betschuana hunters, but otherwise is completely isolated.
 Most of the Bushmen whom we encountered in the Kaukau Veld
 had never seen a white man prior to our arrival.

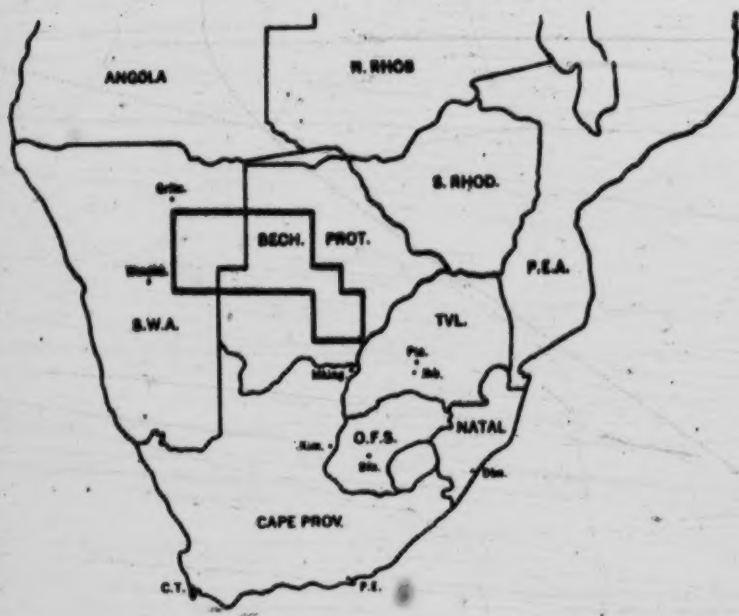
B
 H
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 Word List and Grammatical Outline of the Heikum
 and Kung Language

1. Persons

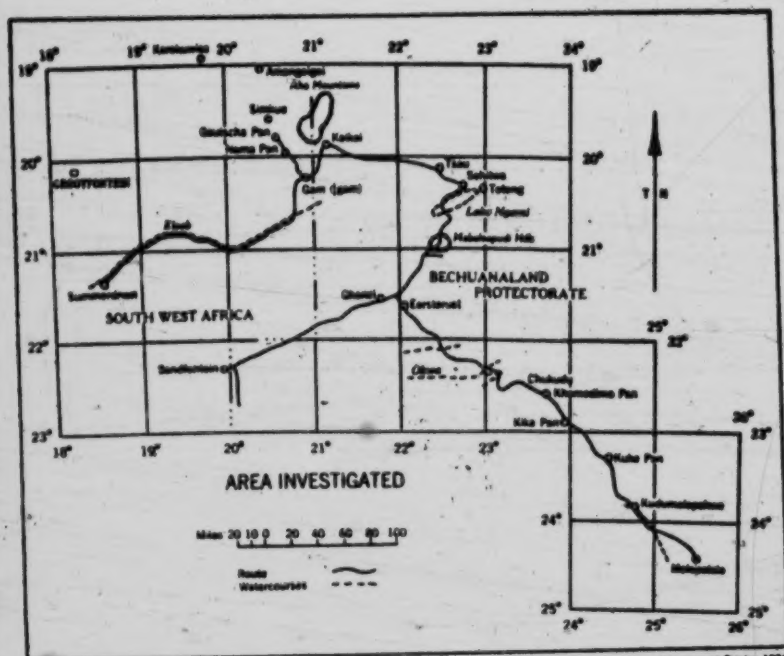
English	Heikum	Kung	Nama
Human being	tshu	tshu	Khóib
Man	tshu n ò (ò = männlich)*	tshu n ò	áoob
Woman	tsau	tshau	tarás
Son	daba oma	daba oma	oab
Daughter	daba tsauma	daba tshauma	oas
Brother	tsng	tsng	gasab
My brother	mé tsng	me tsng	—
Sister	tsau tsng	tsau tsng	gas
Father	ombá	ombá	dadáb
Mother	mdei	medei	máma
Grandfather	omba n ā (n ā = alt)**	omba n ā	aúda
Grandmother	tshau á	tshau á	aúmama
Master	gaucha	gaucha	gáob
192 Captain of a settlement	tshu gaucha	tshu gaucha	—
Servant	±ēi	tshu n±oa	ān
Herero	Damá	Damá	Damán
Betschuana	Birin	±gabé	Birin
Ovambo	ave	—	—

*männlich, "male"

**alt, "old"



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GENERAL AND DETAILED MAPS
OF THE AREA COVERED IN THIS STUDY.

[P. 3]

INTRODUCTION.

Early in 1955 the Chief of the Union Government Division of Botany received a request through the British Museum for a botanist to accompany the Harvard-Smithsonian-Peabody expedition, which in the winter of that year was to make a study of the Bushmen of the Bechuanaland Protectorate and South West Africa. The duties of the botanist would be to investigate and report upon the plants used by the Bushmen in obtaining food and drink, and this task was assigned to me in my capacity as one of the Botanical Survey Officers of the Division of Botany. 121

I joined the expedition on 10th June at Molepolole, after it had been some weeks in the field, and we thereafter travelled along the route shown on the map, reaching Windhoek on 2nd September. 122

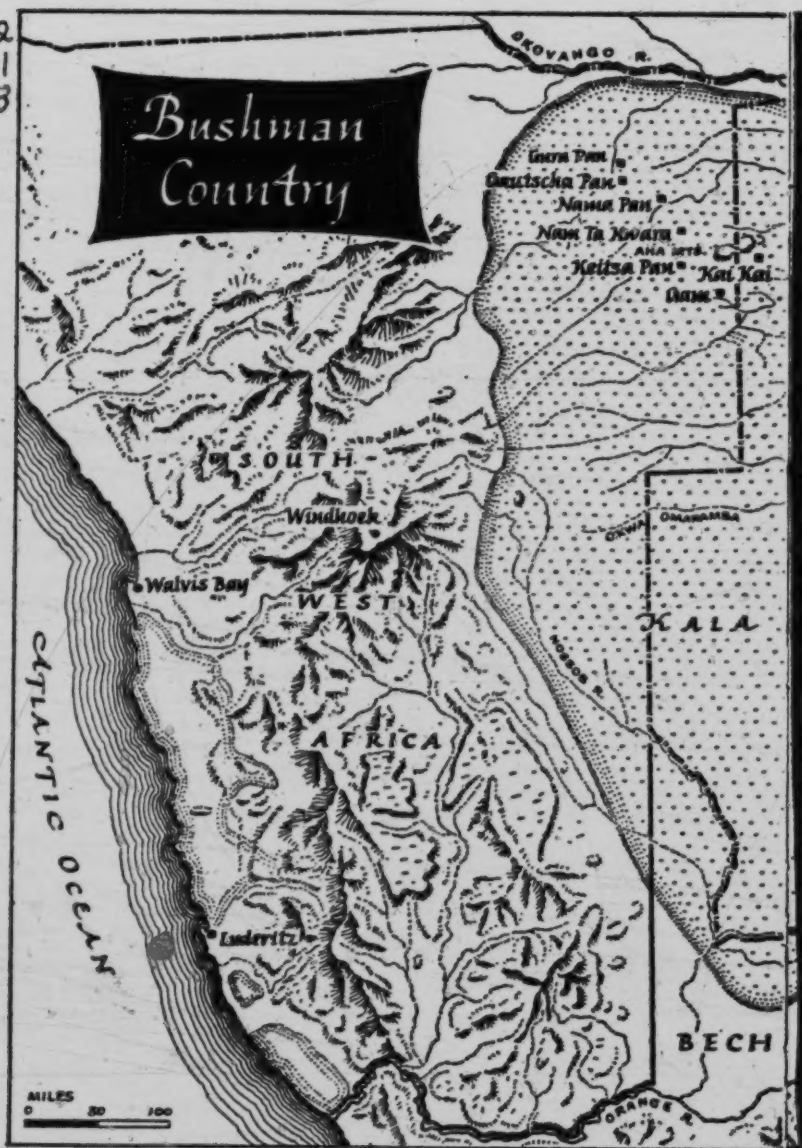
There were two main areas of study, one in the country south of Ghanzi and the other north of Ghanzi. The southern area, part of the Kalahari Desert, was remarkably uniform in every way. The surface was deep loose sand, gently undulating and with occasional shallow depressions of firm dark soil known as pans, which collect a little water after rain. We did not see a hill after leaving Molepolole until the Ghanzi area was reached, nor a stone, except for shelves of limestone in some of the pans. There was no permanent water in the 300 miles between Kudumalapshwe and the Ghanzi farms, but Khungwane waterhole and Khomodimo Pan had not yet dried up. Khungwane held one or two thousand gallons and Khomodimo contained a pond about thirty yards across and a foot or so deep. It provided a home, rather unexpectedly, for a coot (*Fulica cristata*) and a water-scorpion (one of the *Nepidae*). There are no records of the central Kalahari rainfall, but it would be between 18.5 and 19.6 inches, which are the mean annual figures for Ghanzi and Molepolole respectively. In spite of this low rainfall, and although we were there in the dry season, we found that the sand a few inches below the surface and down to at least three feet was damp enough to retain its form when squeezed in the hand. One specimen of a species of *Breviceps* was found in the sand, a small burrowing frog which does not swim or jump and which passes through its tadpole stage in a mass of frothy material which surrounds the eggs. The commonest animals were the rodents whose burrows and tracks were in thousands along our route. The game included gemsbok, springbok, hartebees, eland, blue wildebees, giraffe and smaller antelopes and hares. Of the carnivora, lions, leopards, wild dogs, jackals and hyaenas were present. Ostriches and bustards were seen and occasional small birds of various species, but birds were on the whole poorly represented. The vegetation was mainly grassland, usually about four feet tall and mixed with many shrubs a little taller. Trees were seldom absent for more than a few miles at a stretch, and were scattered to form a parkland or in belts thick enough to hamper the progress of our lorries through them. 133

The northern area was much more varied, with the undulations sometimes forming distinct rises and dales. Hills, however, were still absent, although there were occasional outcrops of limestone and other rock. The soils were for the most part fairly firm, but sandy nevertheless, and damp below the surface. From time to time we crossed zones of purer loose sand, slightly raised above the surrounding country and known as dunes. A number of permanent waterholes, groups of large pans and a rainfall estimated to be about 20 inches a year (Department of Transport 1953) made this area better watered than the Kalahari, and better wooded. 134

9: Thomas T-5 (1951-1955)1959

FX10 Bushmen FX10

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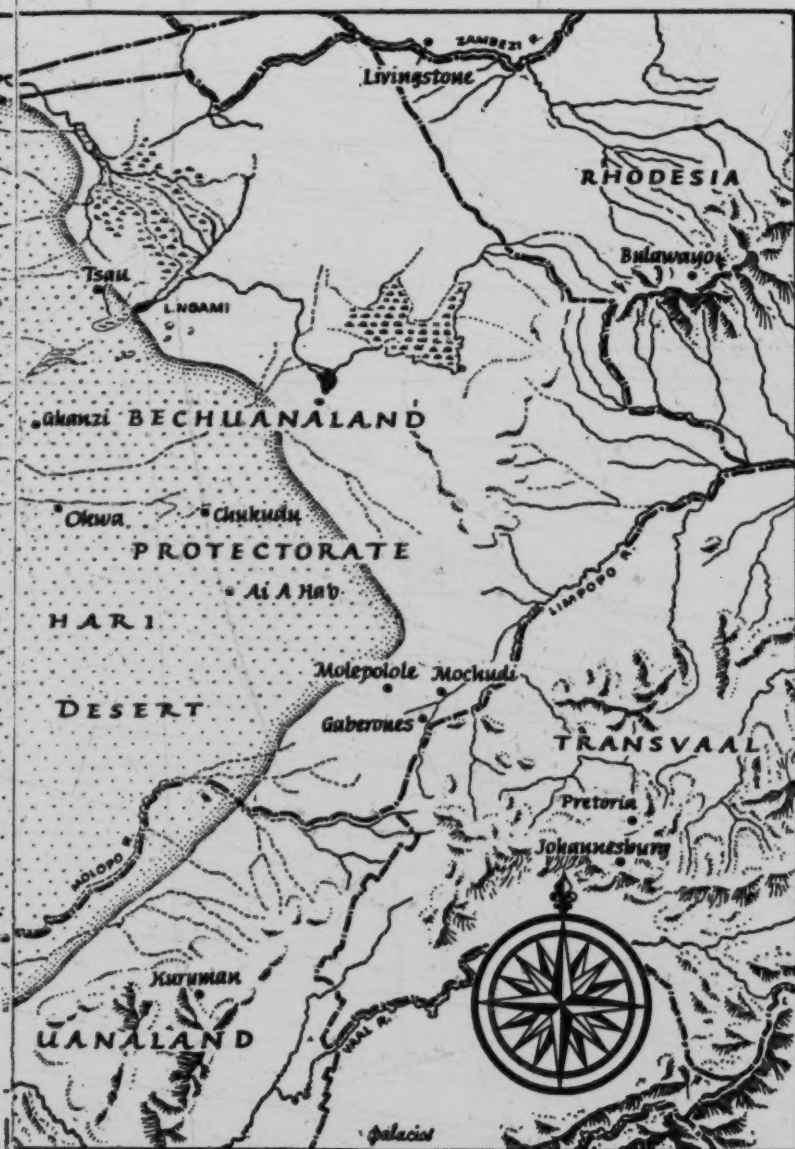


[p. xii]

9: Thomas T-5 (1951-1955)1959

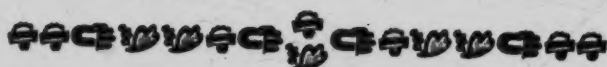
FX10 Bushmen FX10

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[p. XIII]

[p. XIV is blank]



CHAPTER ONE

The Desert

THERE is a vast sweep of dry bush desert lying in South-¹³¹
West Africa and western Bechuanaland, bordered in the¹³³ ●
north by Lake Ngami and the Okovango River, in the south¹³⁷
by the Orange River, and in the west by the Damera Hills.
It is the Kalahari Desert, part of a great inland table of south-
ern Africa that slopes west toward the sea, all low sand dunes
and great plains, flat, dry, and rolling one upon the other for
thousands of miles, a hostile country of thirst and heat and
thorns where the grass is harsh and often barbed and the
stones hide scorpions.

From March to December, in the long drought of the year,¹³²
the sun bakes the desert to powdery dry leaves and dust.¹³⁷
There are no surface waters at all, no clouds for coolness, no
tall trees for shade, but only low bushes and grass tufts; and
among the grass tufts grow brown thistles, briars, the dry
stalks of spiny weeds, all tangled into knots during the rains,
now dry, tumbled, and dead.

The Kalahari would be very barren, very devoid of land-¹³⁷
marks, if it were not for the baobab trees, and even these grow
far from each other, some areas having none. But where there

[151] that marks an edible root, or see a scorpion hidden in the dust
 174 and jump over it. So Bushmen survive in the most rigorous
 131 places; they survive in the dense, mosquito-ridden papyrus
 133 swamps of the Okovango River, steaming like a jungle and
 133 dangerous with snakes and fever, where the River Bushmen
 [184] live, the only Bushmen with plenty of water; they also survive
 on the vast, rolling steppes of central Bechuanaland, the
 territory of the Gikwe Bushmen, who for the nine dry months
 of the year have no water at all and do without it.

609 Besides the fact that Bushmen alone can live in the land
 563 they occupy, there is another reason for their remoteness and
 648 shyness. They are in many instances exploited by the Bantu
 farmers, and by a few of the European farmers, usually those
 who need free or almost free labor. Many Bantu farms and
 households have Bushman servants, or serfs, rather, as they
 usually come from the land on or near the farm, and when
 working they are paid nothing but are given food, tobacco,
 464 and sometimes cast-off clothing as wages. Some European
 648 farms in Bechuanaland and some in South-West Africa have
 Bushman laborers too, though most European farmers do not
 depend on Bushman labor. Those European farmers who do
 employ Bushmen usually pay wages, about ten shillings a
 month, plus a ration of food to each Bushman who is work-
 ing, though not necessarily to his family, consisting of about
 a pound of cornmeal and a quart of milk a day, meat occa-
 sionally, and weekly a ration of tobacco. Perhaps the em-
 ployer will add a set of clothing—that is, a pair of cast-off
 pants and a shirt—and perhaps a blanket every year, but oc-
 casionally they pay their labor in cast-off clothing and omit
 the ten shillings altogether.

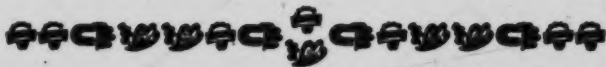
648 European clothing is esteemed among Bushmen, for it is
 291 symbolic to them of a people mightier than themselves, and
 439

language), and Kung; Simon, a mechanic's helper; William Camm, also an interpreter who spoke Afrikaans, some English, and Gikwe; and Gishe and Dabe, two Gikwe Bushmen who lived on Theunis's farm.

We were looking for Gikwe Bushmen, as we had heard that there were some who lived in the area. We hoped that if we found some, Gishe or Dabe might discover a relative and enable us to make friends.

- 133 We traveled for many days, all day long, for, not knowing
137 where the Bushmen were, we hoped to come across some of them somewhere, or find a trace or track that might show us in what direction they had gone. We did not find anyone, though, and we saw nothing but the series of long, broad plains that dipped and tilted ever so little; we would find ourselves down in a wide, shallow bowl of grass, then at the rim of the bowl, where we would see the next plain rolling for miles away. Occasionally we came to an acacia forest, but mostly the country was open grassland with tiny thorn bushes down in the grass to catch us. Because it was June, the beginning of the dry season, there were many veld fires, and although we never came upon any, every day we saw their smoke, gray and misty on the horizon, all around us in a ring.
- 136 Sometimes we saw a small herd of game running far away from us, raising a little cloud of dust. We saw gemsbok, handsome, large, beige antelope, striped black on their sides, white-bellied, with long, straight horns. We saw gray, tousled wildebeest with curved horns like the horns of cattle. Once we surprised a herd of three eland, a bull and his two wives, which had been eating behind a clump of bushes. They threw up their heads when they saw us, eyes catching the sun and shining pale green like fires. They wheeled, hoofs scraping, and ran, their red bodies swaying, their heads held high

[142]



CHAPTER NINE

Peoples of the Veld and Sky

• 133 **A**FTER many days, during which we crossed the rest of the great central desert of Bechuanaland, we came to a strip of fertile country which is in both Bechuanaland and South-West Africa and is owned to a large extent by the Chuana people, who have great cattle ranches, vast areas of grazing-land, and rather small villages. In this fertile land is Lake Ngami, a flat marsh or even a dry pan at most seasons, but when we sat it, it was filled with water, something that had not happened since Livingstone was there.

The country had changed greatly since we left the central desert. In the fertile land there were forests, thorn thickets, even little hills. At some places there were vast grasslands with grass higher than the hoods of our trucks, but in other places livestock had eaten away everything, cattle having devoured the grass, goats having chewed the leaves from the bushes. We saw five or six great herds of cattle grazing on the flat land surrounding Lake Ngami, where the grass was short
 133 and green and looked kept, like a park. There were perhaps a
 137 thousand cattle in each herd, and mixed with the cattle were herds of springbok, a few ostriches, and marabou storks. It

Peoples of the Veld and Sky

143

was pastoral Africa, for the path we followed was marked¹³³ with the hoofs and dung of the cattle, tracked by the huge¹³⁷ ox-drawn, forked log sledges of the Chuana farmers, and now and then patterned with the footprints of a jackal, a hyena, or even a leopard or a lion, for although there are great herds the country itself is wild.

Lake Ngami was an enormous, shining expanse of water¹³³ a few square miles in area and very shallow everywhere. We got out of our trucks and went to the water to rest our eyes with so much luxury and we found that the water was warm, full of brow duckweed, and swarmed with innumerable tiny flies. Ducks and geese were swimming, storks and flamingos were wading at the edges, and while we were looking the largest herd of cattle that we had ever seen came to the lake to drink. There were hundreds upon hundreds of them drifting toward the lake, and the noise of their hoofs was like the sound of a tornado, a great waterfall, thunderous and mighty. A Chuana was riding among them and it took him nearly an hour, traveling in a straight line, to pass through the herd, the cattle parting a little as he came to let him by. He rode on and on, and when we left he was still riding, still among the cattle, and still not out of sight.

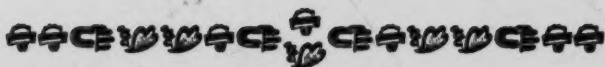
We left Lake Ngami and its vast pastoral lands and went on until we were away from the Bantu farmlands, over the border of Bechuanaland into the Kalahari Desert of South-West Africa, which at that place is called the Nyae Nyae area. This country we knew very well, for it was here that we had lived a year among Kung Bushmen, and although it was a desert it was also totally unlike the great barren steppes of central Bechuanaland, as it was quite rolling, marked by large forests of small trees, by little rolling hills, by omarambas, and by pans, which in the rains were shallow lakes and in the drought were clay flats. The land was still very

- 133 open and tilting, but the low hills and the forests veiled the great sweep of country, and the sun, the moon, and the horizon.

105 As soon as we were there we felt very familiar, very at
187 home. We knew quite a lot about Kung Bushmen, who in ways are different from Gikwe Bushmen—as the country is not as harsh, the Kung are a little grander, living together in larger numbers because they have veld food more abundantly, a little more extravagant with their time and their possessions. They build themselves grass huts or scherms, at least during the rains, and though they know vast sections of their country perfectly, being quite sure of the whereabouts of game and certain of the whereabouts of different types of veld food, they do not have to memorize the whereabouts of each root individually and store this information in their minds for future seasons, as the Gikwe do. The Kung are diligent and powerful hunters, although in some respects their country is harder to hunt in than the land of the Gikwe, more overgrown with brush and trees. But the Kung have metal-tipped arrows and complicated poison, and the men make a point of hunting often and well because their people love meat.

312 We knew their rolling veld with its baobab trees and hidden waters, for in Nyae Nyae the people do not have to scrape roots and suck melons, but are the possessors of deep water-holes where they can drink clear water almost all year long. We knew which stalks among the grass blades marked edible roots, and where game antelope might be found.

823 We knew not only the veld but the beings that live in the
776 sky above it, and knew the beings under the earth and in the four directions. We knew where the great god lives in the east with his tree and his medicine smoke with which he makes spirits of the dead from dead people. We knew his names, for



CHAPTER TEN

Beautiful Ungka and Lazy Kwi

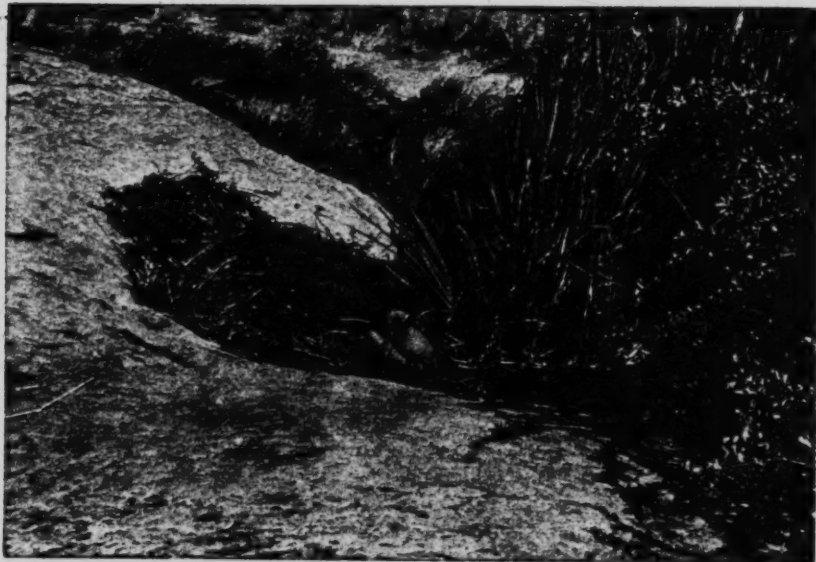
FOR two days we drove our trucks through the scrub forests ⁶⁴⁸ of Nyae Nyae and on the third day we came to a water pan not far from the village of Gam. In 1953 we had lived at Gam a short time; it was the cattle post of a very wealthy Chuana farmer. This farmer lived at Tsau, a large Bantu town several days' travel from Gam, but he had cattle posts with herders all through the country, keeping only fragments of his great herd at each one. Two Chuana families guarded his cattle at Gam. The village had once been the home of about a hundred Bushmen, but when the Chuanas had taken it, many of the Bushmen had been made serfs and they and their families now worked for the Chuanas, tending the herds.

The little pan near Gam was full of blue water, and was ^[133] surrounded by yellow-leafed trees. We found two ostriches be- ¹³⁶ side it. The ostriches stared mutely at us first, very wide between the eyes and square at the jaw, until it came to them that we were not ostriches; and with that they rushed head-long away, flapping their ostrich-feathered wings, working their naked thighs and knees like pistons, wildly out of control. They had an air of old people with tough, gray, varicose-veined legs, wearing nothing to hide their nakedness but lit-

9: Thomas T-5 (1951-1955)1959

FX10 Bushmen FX10

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Long reeds almost filled
the waterhole at Gautscha.

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Alone at his fire, Ukwane
plays a mood song.

[p. 176(A)]

9: Thomas T-5 (1951-1955)1959

FX10 Bushmen FX10

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516



The shining lake of Nama.

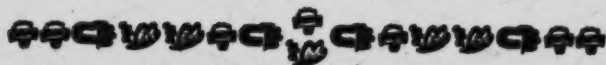
In the middle of the circle the great tree rose,
pink-skinned and mighty, the claimer of two lives.

137



[p. 176 (H)]

[178]



CHAPTER ELEVEN

Toma the Leader

374 **I**T WAS very cold and the wind blew all night long, sweeping the haze from the sky and leaving the brilliant hard white moon. In the bitter hour before morning we were all too cold to sleep, so we got up, finding that the Bushmen had risen before us and were crouched shivering on the ground between the small fires, partly sheltered by the grass.

- 133 When the sun rose the air got a little warmer and shortly
137 after dawn we moved away from the camping-place, on toward Nama. We went through little forests, over slanting plains bordered with trees, past an outcrop of rock where I once had seen a leopard lying on his side, sunning his white belly, past a graceful tree which was one of the trees where the people of Nyae Nyae got their poison. At noon we reached Nama Pan.

Nama was a grassy field in the center of a scrub forest, and in the field was a great rock slide, basin-shaped, which now was filled with crystal water, and around the water was a beach of sand six inches wide. Around this beach the green grass grew, very dark, almost rotten with the water, the rich earth, and the sunlight.

. . .

Toma the Leader

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It used to be that no one lived at Nama Pan, although¹³³ there was a deep waterhole brimming with water always,¹³⁶ even when the lake was gone, and fruit in the bushes around the shore, and plenty of game. It had been an empty and unwholesome paradise abandoned in the veld at the time I once visited it with a band of hunters and women who went there in search of food. It was just before the heavy rains, when all the veld was blooming, and the hunters picked the sweet gum that oozed from the trees with the tips of their spears. The women gathered karu plants, little green fruits that look like cucumbers hanging on vines like grape vines, and that day one of the children saw a ratel, a honey badger, which the hunters speared. This was the badger that no one would eat but Lazy Kwi, the one that made him vomit. At that time the pan itself was empty of water and the dark, rank grass was growing where the water now stood. As we approached the pan a crowd of vultures moved in the grass, ran clumsily toward us, and launched themselves into the air. They heaved their great wings and rose higher and higher and soon a column of vultures hung above the pan, the highest ones almost invisible, the strong wings of the near ones beating the air just over our heads. A shower of feces came spattering down.

When the vultures saw that we were staying they flew gradually higher and higher until they were lost in the air and we walked over the dark grass trampled flat by them toward the waterhole which stood in the center of the pan. On the way we found a vulture egg among the droppings, small and pink and newly laid, for it was covered with a thin coat of slime, as though it had slipped out of a vulture accidentally when she was frightened and hurrying to fly.

A stench hung over the pan which got stronger as we neared the waterhole, a dark cavern in the grass. The stench

¹³³ was coming from it, and though the adult Bushmen knew
¹³⁶ what to expect and didn't waste time investigating, only pausing for a moment at the brink to glance inside, then going on, the children stopped to gaze and I stopped with them. The sides of the well overhung the water in a lip about four feet high. The water itself was the color of clay, and on its smooth surface a hairy back and a pair of pointed ears were floating, the back and ears of a drowned hyena floating on its belly with its nose pointing straight to the bottom. White maggots crept from one ear to the other and the rotting smell rose from the corpse. Obviously, the hyena had been thirsty and when trying to drink had fallen in and drowned. A little boy who was watching the hyena, fascinated, began to howl faintly, "Mmm//ao, mmm//ao," the way a hyena howls, but putting a click in it the way Bushmen usually do, and then for my benefit acted the scene as it must have taken place. He rolled out his tongue and edged his hand toward the lip of the well, then jerked away, staring at the water with yearning eyes and saying: "No, I can't reach it. Yes, I must." He edged his hand toward the lip again, then shrieked "Ail Ail", waved his arms, pawed the air as the hyena had pawed the sides of the well, twisted his head from side to side, eyes starting, then closed his eyes and let his head roll back, his face calm and his lips parted, turning his hands limply, palms up. "Finished," he said.

"Yes," I said. "Too bad."

[262] "Oh, hyenas are worthless animals," he said. He meant that they were not good to eat. Then he ran off and after a short time came back with a long stick, which he pushed into the water. "Help me stir," he said, so I did, and presently the carcasses of two wild dogs and a vulture bobbed to the surface, rolled over slowly, legs in the air, and sank again. "You see?" he said triumphantly. "Many things die here."

Toma the Leader

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to go, he began to cry, saying: "Father, Father," and when⁸⁵⁵ Lazy Kwi hesitated a moment, then said he was going any-⁵⁹³ way, the little boy picked up a handful of stones and threw one at him. This amused Lazy Kwi's wife, who smiled and tried halfheartedly to take the stones away, but it angered Lazy Kwi, who caught his son by the arm and boxed his ears. ^[86] That made the little boy so furious that he had a tantrum; he screamed and cried and arched his back to draw away from his mother, who tried to pick him up, both mother and child doing exactly what they had done when the little boy was a baby and no doubt had been doing ever since. His mother al-^[862] ways did have a terrible time managing him, and he was still nursing although he was now five or six years old. Before his father left, his mother had managed to mollify him somewhat, and she sat on the ground, letting him sit on her leg to nurse. He drank from one breast and held the other in his hand as he glared over his mother's shoulder at his father, who was already in the jeep.

We drove all afternoon, going fast because the ground was¹³³ hard and not too bumpy, and the plains of Nyae Nyae seemed even longer, even wider than the plains of Ai a ha'o, being more slanted. We saw the Aha Mountains, a series of large rock outcrops quite separate from each other, blunt-ended like drumlins, which the Bushmen call "The Knife's Back." They appeared on the horizon shortly after we left Nama, distant and blue over the yellow veld, so surprising to see in that flat country that we stopped to look at them. They seemed so misty and far, so infinitely alluring, that we longed to go there. When we drove on, they stayed as relatively fixed as the moon would, which showed how far away they were. Lazy Kwi said that once on a clear day he had seen them from the top of the Gautscha baobab.

We reached the waterhole at the end of the afternoon, a

- 133 shallow well between two rocks and hidden in a thicket, but we saw no sign of goats or people, only the tracks of wild animals around the waterhole and down a lonely little path that led there, and we wondered what had happened to the goats and Toma. Perhaps he had become a renegade, hiding from the Bantus, on the run with his family; perhaps he now was wearing a goatskin and cracking the bones of his charges out in the veld somewhere.

On the eastern horizon we saw the smoke of a veld fire which Lazy Kwi said might have been lit by Toma and we drove toward it and reached it just before the sun went down. We found a way through the wall of flames and found what we thought was the source of the fire, but the burned area was very large and it was hard to be sure. It was almost dark then, very cold, and when we came to a clump of bushes we stopped the jeep and walked about, gathering dead wood that lay near by. The camp was on a rise and we could see about for miles. In the north rose the brown backs of the Aha Mountains, and on the other side the land fell away, down and down, until all the trees were obscured, then beyond that until the horizon looked like the sea, just a blue line, darker and a little hazier than the sky.

It was very quiet and lonely there except for a few birds that flew high and far above us calling, and we called Toma's name again and again and our voices rang in the cold air, but we did not get an answer. Lazy Kwi, naked and barefoot in the frost, walked over the plain with his arms hugged against his chest for warmth and called more: "Toma . . . Toma," a little annoyed as he was tired, then waited, called again: "Toma . . . my brother . . . brother . . ." and as his
136 voice died away no answer came; but a koorhan, a dark bird the size of a chicken, flew out of a clump of bushes far away and rose cackling up to the sky, where we saw it, black and clumsy, before it dropped to the earth again.

Toma the Leader

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clumsy, before it dropped to the earth again. The last pale light faded on the horizon and for a minute the sky looked like the cold sky over tundra or over an icy sea before the empty veld turned dark. 133 ●

To clear the grass from our camping-site we lit a little grass fire, being too tired to pull up every blade of grass by hand, and the little flames seemed so cheerful and warm that we felt better right away. We made a cooking-fire and cooked our meat, then unrolled our blankets to lie upon, and we found that because the wind had died our cooking-fire shed so much heat that we were as warm as we would have been in a shelter.

We made coffee and talked all evening, and unnoticeably our fire burned very low and we got colder, the night seemed darker and in the dark the koorhan began to call again, and when we looked far over the veld for the light of another fire but saw none it came to us that Toma might have been taken by the farmers after all. We talked for a while about that, but then Lazy Kwi said he believed that Toma was somewhere not very far away but was too clever to show himself. After our last expedition had left Nyae Nyae the last time, Lazy Kwi told us, Toma had waited months, whole seasons, for us to come back and when he had heard the trucks of the farmers he had gone to them, thinking it was us. "Now he is angry. Now he is too clever to make that mistake again," said Lazy Kwi. 648

That did seem possible, so we stood up and shouted Toma's name again; but even at night, when sound carries best, we heard only our echo, distant and diffuse, and at last we built up our fire and got ready to sleep. The night was perfectly quiet. No sound came from the wind or animals, only the sparks snapping from our fire, which burned for a while but soon died to embers and the smoke rose white and ghostly into the dark. 123

pointed to me and said: "Look at Dikai. She wants to go home. Let's go home." And so we did, and as evening came we went by Gautscha Pan.

133 We had not seen it before; we had been in the bushes on
136 its eastern side when we had looked for honey, but now, as
137 we emerged from the bushes, we found ourselves on its farther, eastern rim.

Great Gautscha Pan was full of water, shining gray water. Smoke overcast the evening sky all around the horizon and high into the air, and all we could see was the great stretch of gray water with yellow grass like islands in it and flocks of small black ducks breaking its surface, and yellow grass all around. The line of bush on the horizon was gray-green near us where we stood on the rock slide at the eastern rim, touched with yellow spots, acacia trees with their soft, pale-yellow fuzzy flowers round as balls, looking like clouds, like dreams, pretty and fresh with a sweet fragrance, and as the bush went around the pan the haze dimmed it, giving it the subtlest colors and a wild, still look like trees before a storm. Among the bushes to the north of us rose the two visible baobab tops, eerie and far away, and in the water the yellow grass was reflected upside down.

There it was, Toma's great country, magnificent and solitary, for no one lived there now, no person, no animal, except the black wild ducks that swam on the water, some near, some far away, in lines of three or four, in pairs, moving gradually in their even, deliberate processions as though they were being drawn slowly over the water by hidden streams.

The sun was sinking; high above the horizon it was deep red, a perfect circle, almost hidden by the haze and reflected by a red path in the water, and as it sank into haze that grew thicker and thicker the sun got paler and more obscured until it vanished long before it set.

The Medicine Bees

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That was beautiful, the sun, and there was no sound as it went down except the sound of doves calling among the trees on the far bank, whirring, cooing, a call that was pulsing and thick, urgent, throbbing, rising in intensity as the sun got dimmer, reaching a peak as the sun disappeared. It was as though they had brought it down, and when it was gone there was no sound at all; the silence was complete.

Gautscha Pan was more than a mile square and we, Europeans and Bushmen alike, held our breath with the majesty of it, its great solitude, the great drama of sunset going on reflected in its water for no eyes to look at; and when the sun was down and the colors of the veld were dull and dark we started home, but that was an impressive last look at a place and the last I ever saw of Gautscha Pan.

In the morning our trucks were packed and ready. We were not happy to leave and the Bushmen were not happy to have us go. We gave them presents of all kinds, presents of pipes, of knives, of beads, of clothing, of cornmeal and tobacco; and all this pleased them, but Dikai cried when we said good-by and asked me if I would ever come back. I said that I hoped so and she kissed me and I felt wet tears on her face.

The people who had come from Gam wanted to ride a little way back with us to a mangetti forest, and we were glad to have them, but the others, Toma and his band, Gao Feet and his family, wanted to return to the tsi fields where we had found them, the veld food at Nama being almost gone, and before we left they had their bundles packed and were ready to go; as our trucks moved away they waved good-by and before we were out of sight we looked back and saw their small groups going in every direction, scattering to the four winds. When we reached the mangetti forest the others climbed

(10) called "clicks" that mark the speech of the Bushmen. Distinction is made between four classes of "click": the dental (/), lateral (//), palatal (≠), and alveolar (!) —Ed.]

But "nation" is a new word, recently arisen in the vocabulary of a country whose people are struggling to define themselves in present times. The !Kung, who know who they are, do not yet need it. For, besides !Kung, which they use rarely, they call themselves *Dzu/oassi*. *Dzu/oassi* can be interpreted as "the people" in opposition to "the animals," for example, or as "the perfect people," or, indeed, as "the only people."

Unlike other nations, the Bushmen practice no agriculture, domesticate no animals. They are hunting and gathering peoples. But all the nations

● (13) —Bushmen, Bantu and white alike—who live in the Kalahari Basin must

- 133 face its exigencies, for this sand-filled depression is distantly rimmed by mountains, and the mountains catch most of the clouds that might otherwise bring rain. The rain that does fall is sucked into the sand, so that there is little surface water and much of the Kalahari Basin is true desert.

137 **A**LTHOUGH true desert, the Kalahari is not a bare place: the face of the sand is hidden. Much of the desert is clothed with stalwart, similar bushes, most of them thorned. In places, dry forests grow slowly: the trees stand apart and the air between them is strangely still on days of wind. Grass covers the sand: in sweeps on the dry plains, in glens in the bush; grass grows on dunes gathered long ago by patient wind, and in the silent valleys, called *omuramba's*. In a younger, greener time that has come and gone since man first lived in southern

[P. 7]

174 last, white and black met,—raiding one another for cattle across the Fish River—and the time of the Zulu and the Voortrekker was near, the classic period of the Bushmen was over.

(31) THE AREA called Nyae Nyae lies on the border between South West Africa and Bechuanaland. It covers about 10,000 square miles, between 18°55' and 21°0' South latitude and 19°50' to 21°25' East longitude. In

●(33) the center of this area is a ring of *kalk* pans. Nyae Nyae is actually the name the !Kung gave to this ring of pans, although I have applied it to the whole area occupied by the !Kung nation.

136 There is game round these pans and, in small groups, everywhere in Nyae Nyae. Wild roots grow in the bush that shrouds much of the territory. There is *tsi* in the south, while

137
133 *mangetti* forests crowd along the crests of white sand dunes in the south and east, and spread over the north. Their

137 nuts drop abundantly to the ground
every year. There are ten permanent
waterholes—some clustered around the
ring of the pans, the others set like
infrequent jewels in a low limestone
ridge along the eastern border. Dur-
ing the rains, small pans and hollows
hold embroidered pools. Hollow trees
also catch water and keep it until it
turns brown, while several kinds of
water roots can be counted on all year.

174 Until recently, few came and none
but Bushmen stayed for long in Nyae
Nyae, for there is not enough water
to attract pastoral peoples, and the
soils are not the best for crops. The
!Kung say: "We have always been
here, drinking the Nyae Nyae waters."
Perhaps this "always" began at about
the time when the western Bantu horn
was moving southward through Ovam-
boland. All one can say for sure is
that they came, possibly seeking sanc-
tuary in the empty spaces of the Kala-
hari, found, in Nyae Nyae, a quiet

12: Marshall E-5 (1951-1959) 1961 FX10 Bushmen FX10
Kung



FIG. 1. The clustered scherms of a /Kung weef (left) are hardly visible in the grass and brush of the veld



FIG. 2. Groups from Band 1 and visitors sitting at three family fires

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FIG. 3. Khoan/a thinking things over after 'the talk'



FIG. 4. /U, the wife of Tona, with an expression which is characteristic of her

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[p. 240-A]

13: Marshall E-5 (1952-1955) 1962 FX10 Bushmen FX10
Kung



1. Whirlwinds in the huge veld fires become pillars of cloud by day



2. The oracle disks

[p.228(A)]

guages, some now virtually extinct, were characterized by a fifth click made with the lips, called the kiss click (⊙). In addition to clicks, the Bushman languages have tones: high, middle, low, rising, and falling. Oswin Köhler has given special attention to tone as well as to other features in his study of Bushman languages, especially Barakwenga (Köhler 1962).

Each of the large divisions of the Bushman languages—the northern, central, and southern divisions (see Bleek 1956)—differs markedly from the others. Within each group are several languages, sometimes resembling each other enough to be considered merely dialects of the same language, but more often differing so widely as to be distinct, mutually quite unintelligible languages. The !Kung described in this chapter (Köhler's and Westphal's !Xú) belong to the northern group.

HABITAT • The Kalahari Desert, some 1200 miles long, with a mean high altitude of about 3000 feet, forms part of the great plateau of southern Africa. It is a basin in form, covered with wind-blown sands, sometimes red, sometimes white, to a depth of 300 to 400 feet. The underlying rock crops out rarely in ridges and a few low hills.

Stamp (1953:78) classifies the Kalahari as a semidesert. Its conditions are not the most extreme. Our expeditions recorded daytime air temperatures in the shade up to 115° F. and sand temperatures in the sun up to 140° F. In winter the temperature at night falls below freezing but for most of the year the nights are temperate. Although they seem acclimated to the heat, the Bushmen appear to find the colder temperatures very uncomfortable and shiver violently if they are away from their fires when the cold south winds blow.⁸

The rainfall, which comes in summer thunderstorms—6 to 10 inches, increasing in the better-watered parts toward the north, according to Wellington (1955:61)—though slight, is sufficient to sustain a varied drought-resistant vegetation, and the country is covered with grass, brush, and scant small trees. In the northern and northwestern parts, the trees are more numerous and taller and include shivi groves and nut-bearing mangetti—important sources of food to the Bushmen. And in all the areas of the desert that Bushmen inhabit are found edible plants, in scant, far-apart patches perhaps, but existing. The vegetation, furthermore, provides material for fires, shelter, weapons, implements, tanning, poison for arrows, and juices (for example tsama melons, on which these people can live when there is no water). In short, this desert provides the things that make life possible; otherwise the Bushmen would be dead or somewhere else.

The desert is a forceful shaper of the outlines of Bushman culture, and both the possibilities it permits and the limitations it imposes have been meaningfully summarized by Robert Story in a personal communication:

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On the Move A Bushman hangs his possessions on a carrying stick and thrusts his assegai under the stick in back to distribute the weight onto both shoulders.

222 *When the people go to gather mangetti or tsf, the men always ac-*
462 company the women and help to gather and to carry the heavy loads—as much as they possibly can—back to the water hole.

Though the men help, especially with tsf and mangetti, gathering and digging are the work of women and the work that takes up the greater portion of their energy and time throughout their lives. Their digging implement is a sharpened, unweighted stick about three feet long. When we were living with the Gautscha bands at the Gautscha water hole in the dry season, the women went to gather every day or every second or third day, depending on the distance and on how much food they could carry back. They would plan which patch or fertile area to go to and start out in small groups, some to one place, some to another. They would walk five or ten or fifteen miles to their destination and then pick berries or dig roots, which may lie two feet or more under the ground, until the mid-afternoon, and then start back to the werf (campsite) at the water hole. They carry their infants tied to them, small children on their shoulders, and the loads of veldkos in the bulges of their karosses (skin capes). When they near the werf, they pick up two or three logs for the night fires.

The veldkos that each woman gathers belongs to her and with it she feeds her own family, sharing with whatever relative or friend she wishes. Custom does not require her to share it in a systematic way with others as meat must be shared. She cooks her veldkos in the coals and hot ashes, pounds fibrous roots and hard berries in her mortar, and serves the food to her family as a family meal, usually in the evening. During the day, however, people may cook and eat little snacks at odd times.

222 Although there are numerous kinds of veldkos, we must not give the
433 impression that there is a great abundance. In fact, the opposite is true. Food
731 is scarce all over the arid Kalahari, where drought is the scourge on all—the cattle raisers, the dry farmers, and the gatherers of the wild foods.

128 There has been much intermarriage in the Nyae Nyae region. Families
166 therefore may have close relatives—with whom they have the right to live—
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16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
!Kung

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this area is waterless and uninhabited. In the center is a ring of pans and a series of waterholes which support at present a population of 1,200 !Kung Bushmen. They occupy an area of about 3,500 square miles (70 miles from east to west x 50 miles from north to south). This central complex of water sources is surrounded by a belt of waterless, uninhabited country that varies in width from sixty miles, on the east and north, to over one hundred miles on the west and south. Access to the interior is limited. One line of wells links Tsumkwe in the interior with Grootfontein on the west.

[149]

Two rarely used motor tracks join the interior with the Okavango swamp to the east. A police patrol road cut in 1954-55 runs from south to north along the B.P./S.W.A. border. The maximum vehicle speed obtainable on these tracks is 20 mph

[177]

and trucks pass through about once a month. The difficulty of the terrain, the lack of farming potential, and the scarcity of water have deterred European and Bantu penetration of the area.

[114]

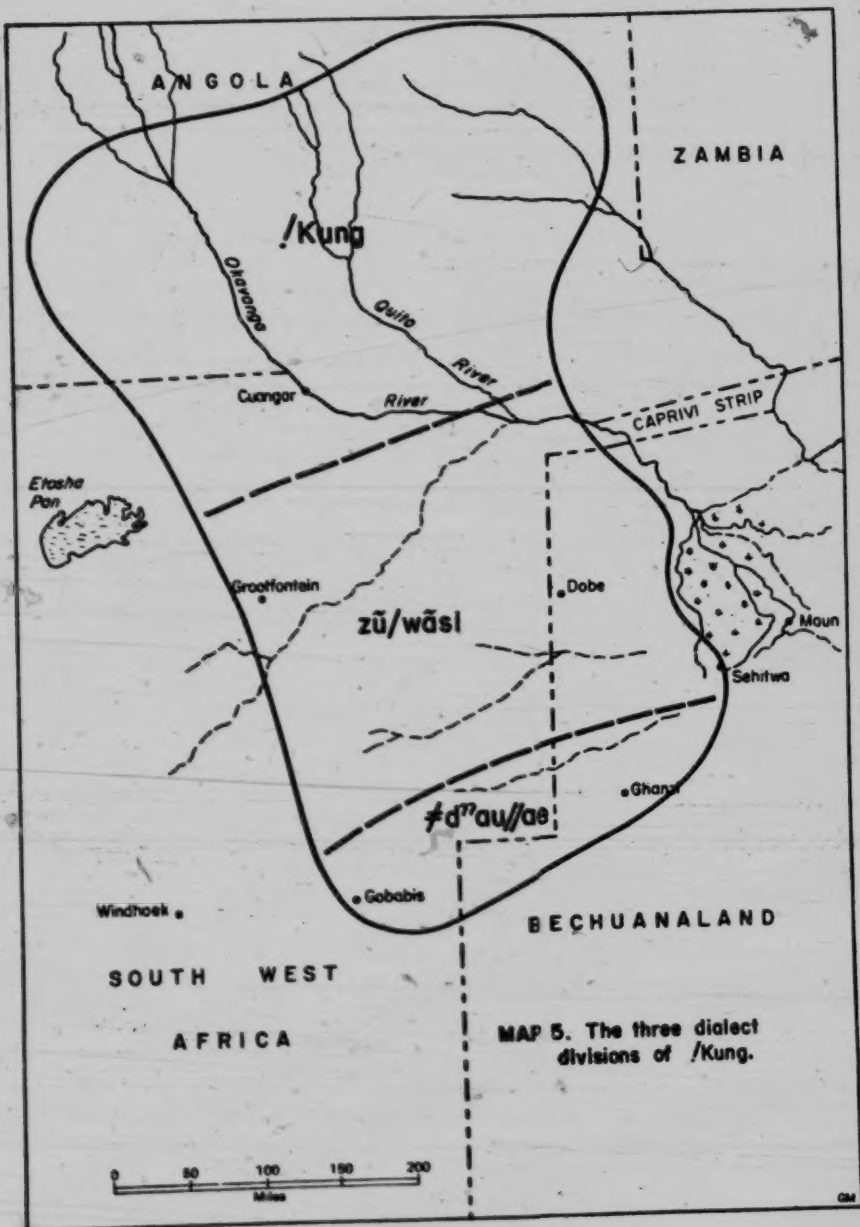
The distinction between periphery and interior has been applied to the country of the central !Kung by John Marshall (1957) and Lorna Marshall (1960:327ff). The present usage differs from that of the Marshalls. They applied the term "interior" to the Nyae Nyae ring of pans and regarded the waterholes at /'ai/'ai, /Gam, and !angwa as peripheral. Since

Since
131 the Nyae Nyae peoples are closely linked genealogically to
• 133 the peoples of /'ai/'ai, /Gam, and !angwa, and since their
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619 several territories are surrounded by an uninhabited belt
60-100 miles in width, it seems more useful to include all
the central water sources under the term "interior" and
consider all the other river dwelling and farm !Kung as peri-
pheral (see Map 7, p. 37).

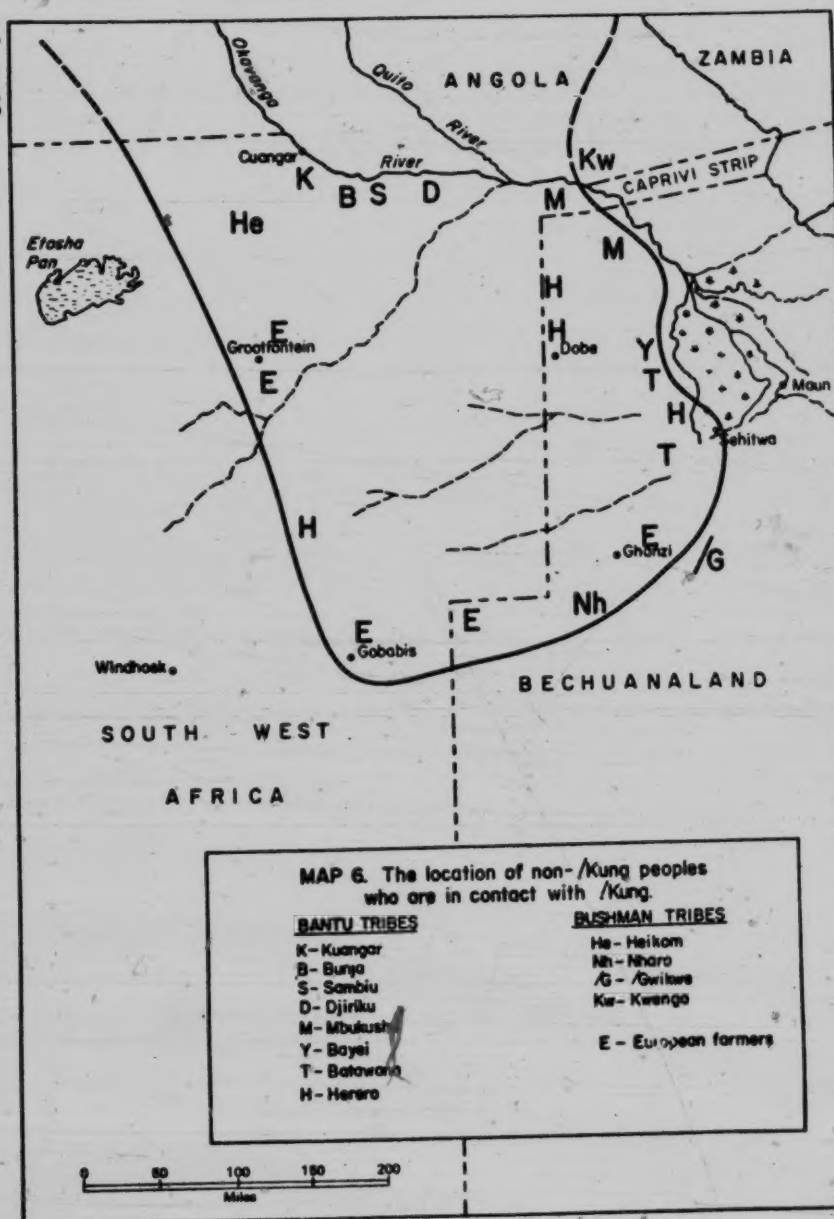
121 This description of the subsistence ecology of !Kung
184 Bushmen therefore concerns the interior !Kung of the central
433 dialect division. It is not to be taken as representative
of the !Kung in general, the great majority of whom are today
living on European farms or working closely with Bantu.¹ It
was pointed out in Chapter I that the selection of a study
site was dictated by the necessity of finding a Bushman
population living traditionally and independently. It was
realized at the outset that such a population was not typical
of the majority of !Kung.

¹ A further stricture must be applied to the !Kung of the interior. In 1960 a Government Station was built at Tsumkwe, S.W.A. Since then the 800 interior !Kung on the South West African side of the border have settled there and are receiving instruction in agriculture. The 400 !Kung on the Bechuanaland side of the border have not been permitted to participate in this program. Therefore, during the period of the present study, only the interior !Kung in Bechuanaland were leading a year-round hunting and gathering way of life.

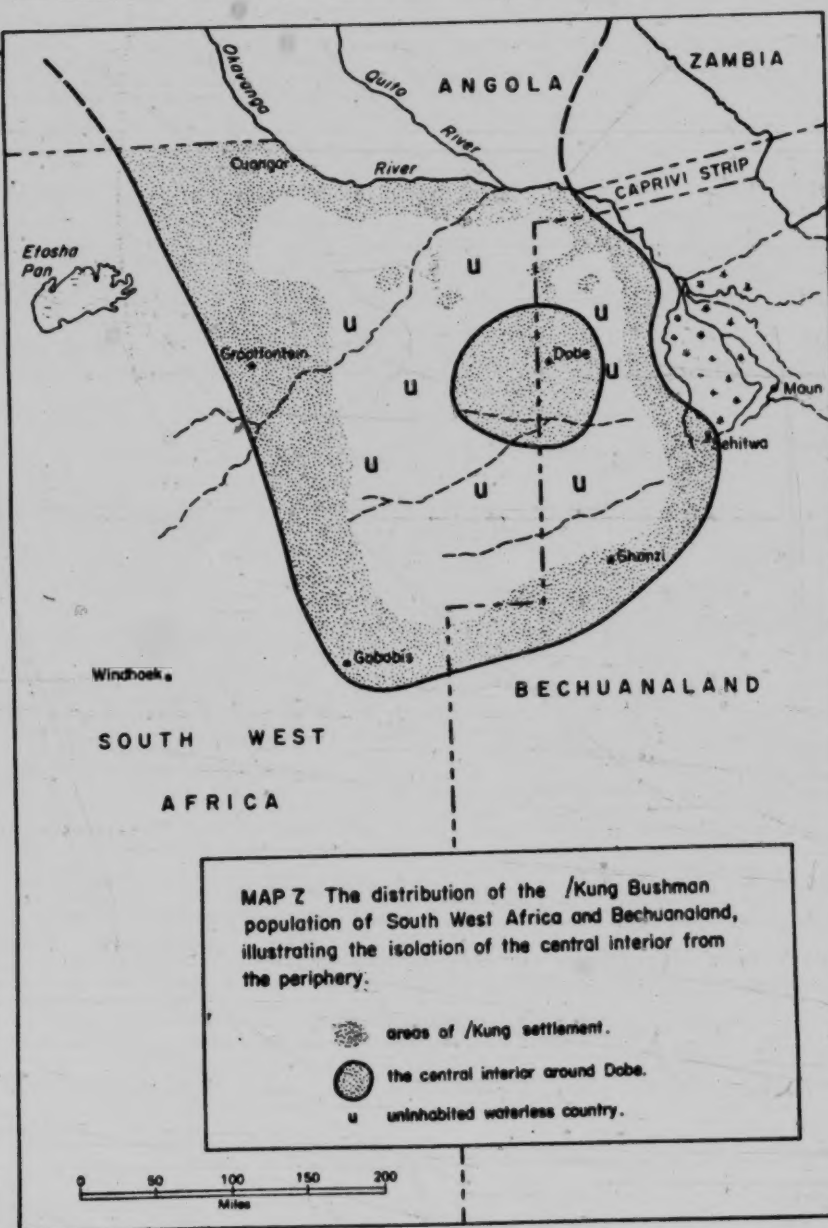
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131 :goše, the first waterhole of the area. Continuing southwest
[133] from :goše the motor track parallels the course of a dry
river bed called the !angwadum for 23 miles until it meets

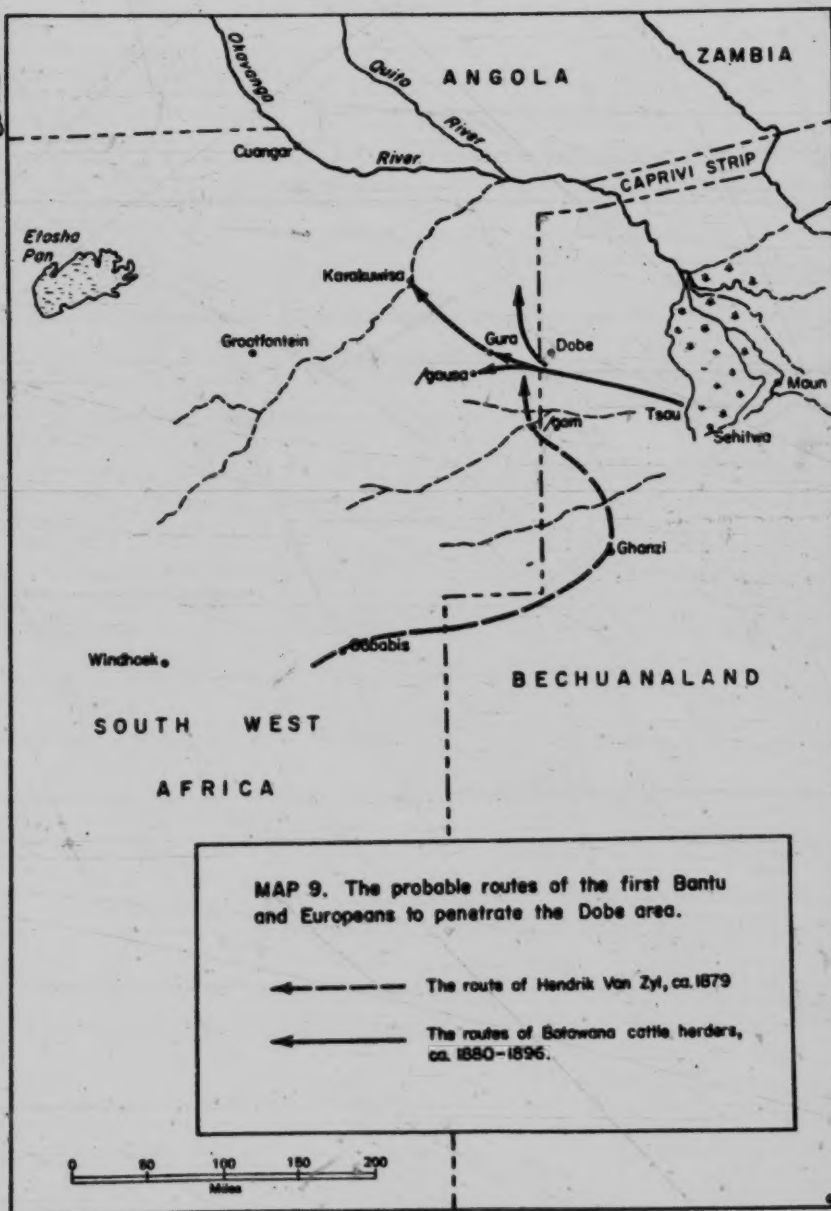
131 the South West Africa border track. Along this route from
312 :goše to the border one passes the waterholes of Kamburungu,
!angwa matse, !angwa, Bate, Kathikona, Mahopa, !Kabe, and
!tbi. Each of these wells supports Bushman groups and Bantu
cattle posts. Following the border track north from its
intersection with the !angwadum one can reach Dobe which
supports a resident population of Bushmen but no Bantu.

[133] Turning south from the intersection, one crosses the low
ranges of the Aha Hills which are usually uninhabited and
arrives after 25 miles at /ai/ai, a large waterhole with over
one hundred Bushmen.

131 All these centers of habitation lie to the east and
361 south of Dobe. To the north, the nearest settlement is
n'aun'au at a distance of 40 miles and, to the west, the
nearest settlement is Tsumkwe, 35 miles away (see Map 8).

131 Eight naturally occurring waterholes support the bulk
312 of the Dobe area population which in November, 1964, stood
[161] at 763 people. There were 433 Bushmen residents, all but one
[563] of them members of the !Kung tribe. There were 340 Bantu,
eighty-five percent of whom were of the Herero tribe. The
remaining Bantu were Batawana, Mbukushu and Bayei.

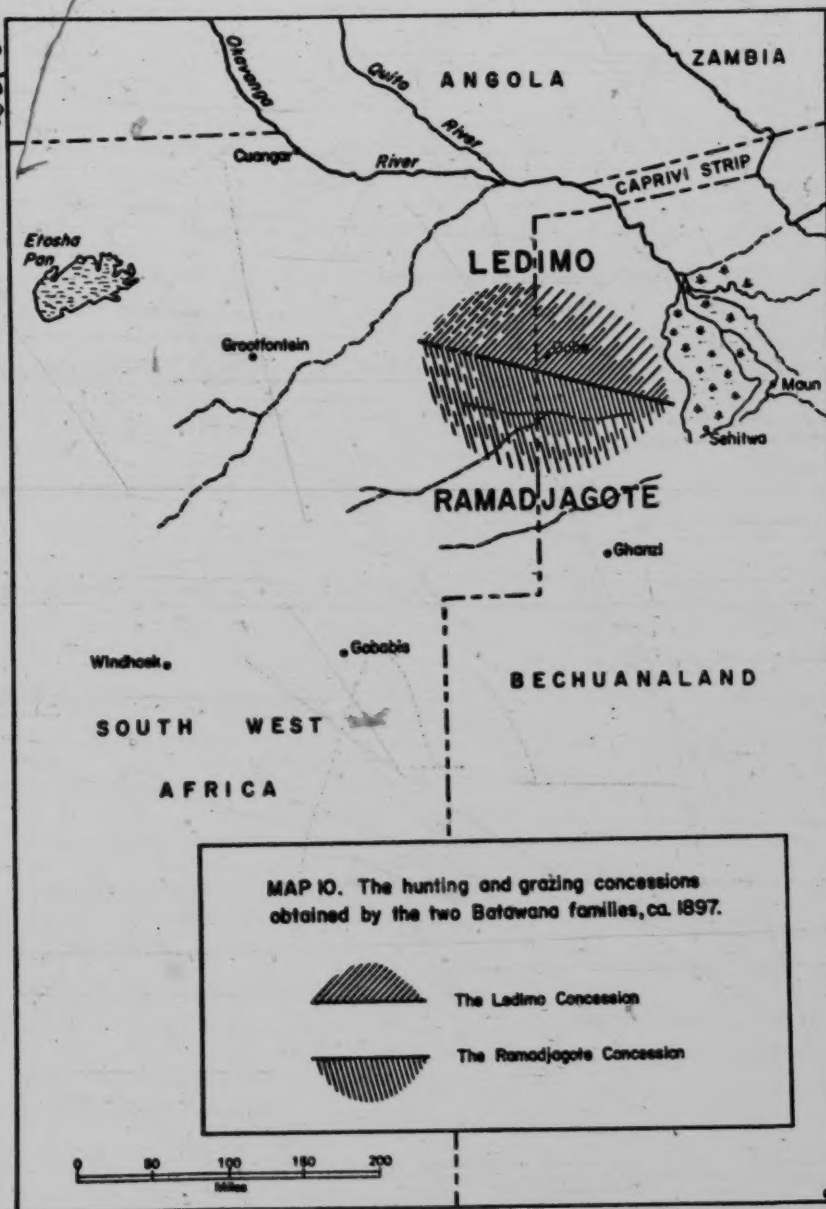
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16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
!Kung

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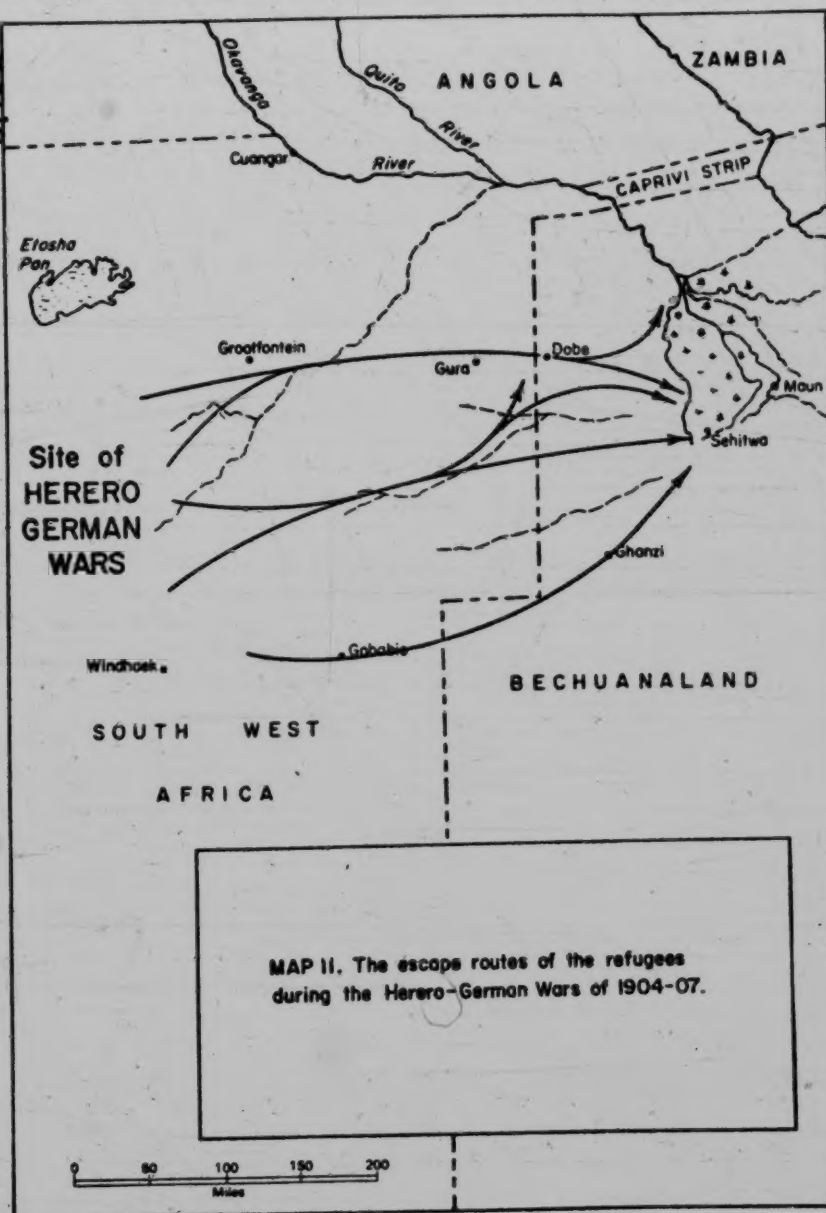
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16: Lee E-5 (1963-1965) 1966 FX10 Bushmen FX10
!Kung

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IV. THE ENVIRONMENT

131 The area under consideration is a tract of land in Bechuanaland and South West Africa. The boundaries are the Okavango River on the north and east, the Ghanzi Farms on the south, and the edge of the South West African Escarpment on the west. The area thus defined (excluding transitional zones on the edges) is c. 160 miles x 160 miles = 25,600 sq. miles.

• 133 The area is characterized by a series of fixed dunes running parallel to each other 5-50 miles in length oriented approximately W 10° N / E 10° E. In the spaces between the dunes, 1-5 miles in width, are basins or molapos. "Molapo" is a Sechuana word meaning dry river bed. It is used throughout the thesis when referring to the longitudinal depressions between the dunes as well as the more deeply incised river valleys that do not conform to the parallel patterning of the dunes. [114] "Molapo" is the Sechuana equivalent of "omaramba", a Herero word used by J. Marshall (1957), Story (1958), and others.

The combination of basin and dune forms a remarkably uniform pattern from north to south. At several points the landscape is incised by deeper drainage systems that expose the bedrock. The molapo dune pattern is also interrupted by

- 133 three rock outcrops and one ring of large pans. These features are illustrated in Map 12, p. 71.¹

Soils and vegetation

- 134 The dune crests and flanks are characterized by deep
137 loose sand of red and white. These support a distinctive association of broad-leaved trees and shrubs. The molapos, both in the interstices of the dunes and in the more deeply incised river beds, are characterized by compacted grey soils. These molapos support an association of complex-leaved thorn trees and shrubs.

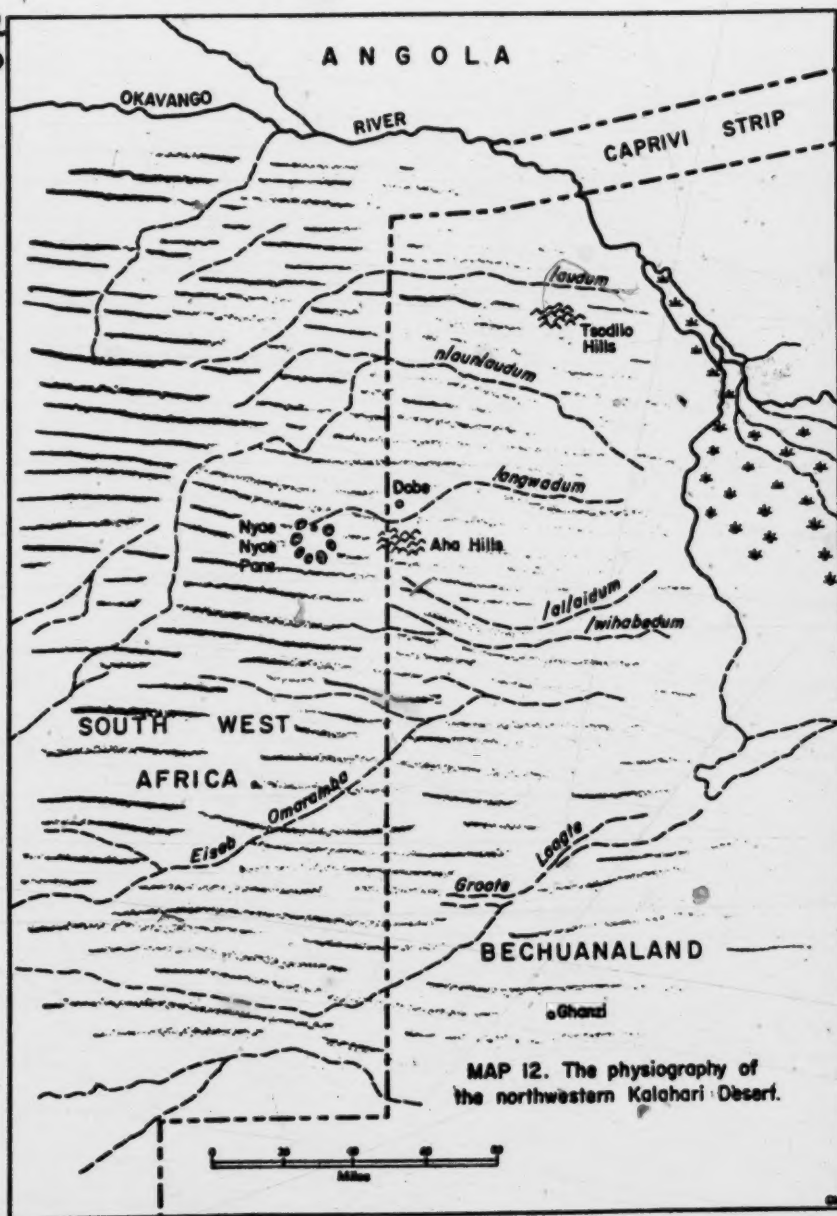
- 134 The color and composition of the soil appear to be a function of elevation. The color sequence from reddish to gray correlates with the texture sequence from loose to firm. These two sequences correlate with elevation within local drainage systems.

Thus the reddest, loosest sands are found on the crest of the dunes. The flanks of the dunes and the flats have buff white compacted soils, and the molapos have grey, highly compacted soils.

These sequences are schematized in Figure 1, p. 72.

¹As of April, 1965, there are no maps available for this area. Map 12 is based on the examination of aerial photographs on file at Maun, B.P. and the author's rough transects by Land Rover.

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vegetation and water.

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Map 13 shows the physiography of the Dobe area. The area enclosed is approximately 2,700 sq. miles. The large river course (upper right) flows from west to east (it runs about once in ten years) and contains four of the eight permanent natural waterholes in the area. Three additional waterholes are located on limestone flats within a few miles of the main course. The eighth waterhole is in the large molapo at the southern edge of the map. In addition, there are three small wells which have been dug by the Bantu in recent years. All are situated in the main !angwa molapo.

Six interdune molapos are shown by single black lines. The waters of three of these may reach the main river in flood years. In most years, however, they fill internal drainage basins only. The directions of flow are indicated by the arrows. Five of the larger summer waters are represented as open circles in the molapos. The map shows clearly how the main molapos and the hills interrupt the east-west parallel orientation of the dunes. The areas not represented as dunes, molapos, or hills are flats and transitional vegetation zones. It will be noticed that west of Dobe the flats extend in a broad band 10 miles deep on either side of the molapo. Elsewhere the flats form narrow belts between the dunes and molapos.

Map 13 will be used in subsequent chapters as a base map

(LEAF CONTINUED ON PAGE 81)

- 133 for plotting territorial divisions, group movements, and seasonal subsistence patterns.

Fauna

136 The main fact to be noted here is the comparative scarcity of migratory large game. There is evidence for a diminution in the abundance and variety of large game over the last seventy years. There are reports that the hunter Van Zyl killed elephant and rhinoceros at /gam, 60 miles south of Dobe in the 1870's. Some Bechuana informants found rhino at /ai/ai around 1915. /ai/ai is 25 miles south of Dobe. Today elephants are only occasional summer visitors in the Dobe area (two came in 1963, none in 1964). There are no rhino within 200 miles of Dobe. Springbok were present as late as 1950 (J. Marshall 1957) but they are absent today.

Ungulates: In terms of biomass the most abundant ungulates are kudu, wildebeeste, and gemsbok in that order. Kudu were observed in groups of 3-7 in all seasons. On one occasion a herd of twenty was seen. Wildebeeste occurred in all seasons in groups never larger than eight. This is in sharp contrast to the situation 200 miles south of Dobe where herds of several hundred are common. Gemsbok were sighted singly or in pairs in all seasons.

The most common antelopes numerically were the two non-

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278 arrows: Diamphidia nigro-ornata and Polycada flexuosa.

These are described in Chapter VI.

Climate

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• [133] The Kalahari Desert has a mean elevation of 3,000 feet above sea level and lies within the summer rainfall area of Southern Africa. These factors contribute to a climatic regime that is characterized by hot summers with a three to four month rainy season, and by moderate to cool winters without rainfall.

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805 Five seasons may be distinguished in the Dobe area. Most Bushmen recognize five (although some divide the year into eight or more seasons) and their scheme will be followed here.

Seasons

1. !huma (spring rains) -- The Bushman year begins in October or November with the onset of the first rains. These consist of light convectional thundershowers that often fall on one area and miss other areas entirely. The first rains have the effect of triggering growth and reproduction in the flora and fauna and may overnight transform the landscape from a parched and dry state to one of lush greenery.

2. bara (main summer rains) -- These rains fall from December to March and coincide with the season of plentiful food. There is a wide variation from year to year in the

VIII. WATER AND THE SEASONAL ROUND

- 133
137 The Kalahari desert is not a food poor area. Most of it is situated between the 10 and 20 inch isohyet and therefore it is marginal for cultivation (without irrigation), but the desert supports a remarkable abundance and variety of edible wild plants which have become genetically adapted to arid conditions.

Geographers have classified the Kalahari as "desert" because of the lack of surface water (Wellington 1955 etc.). This in turn is a function of the sandy terrain which supports surface water only during a brief summer season. In the few localities where the underlying geological formations are exposed, permanent standing water is found. And these point sources of water are usually surrounded by waterless belts of 312 up to 200 miles in width. Edible plants on the other hand 824 are widely distributed both in the immediate vicinity of water 433 and at considerable distances from it. The geographical separation of food and water in certain seasons is the critical 221 problem of !Kung Bushman subsistence.

This is not a major problem during the rainy season when seasonal standing water may be found in close proximity to the concentrated food resources. Nor is this a major problem during the early winter when food is available around the

2: Schapera E-4, 5 (no date) 1930

FX13 Hottentot FX13

Bushmen FX10

GENERAL FEATURES

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superior to those of the other native peoples that they have been able to preserve much of their original cohesion and culture, and in many cases to offer a strong resistance to the disintegrating effects of contact with European civilization. 500

The present work deals with those two groups of natives who have suffered most at the hands of the European settlers: the Bushmen and the Hottentots. In spite of the far-reaching differences between them, they have in common several features, not only of race and language, but also of culture, especially religion, which justify their being treated together. These common features by no means render invalid the distinctions upon which is based the customary classification of these peoples into two separate groups. They are significant enough, however, to permit of both groups being regarded as constituting to some extent a larger ethnic unit, which, it is important to note, is clearly differentiated from the Bergdama on the one hand and the Bantu on the other. The term *Khoisan*, recently coined by Schultze to denote the racial stock to which the Bushmen and the Hottentots belong,¹ has therefore been accepted here as a convenient generic name for these two peoples. The necessity for such a generic name will perhaps be seen more clearly when the racial history of each people has been considered.

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TOPOGRAPHY: GENERAL FEATURES

The Khoisan peoples at the present time live almost entirely in the western and central portions of South Africa. The main political areas within whose borders they are found are the Territory of South-West Africa, formerly a German colony, but now administered under mandate by the Union of South Africa; Bechuanaland Protectorate, administered directly by Great Britain through the High Commissioner for South Africa; and the central and western districts of the Union, principally in the Cape of Good Hope. The Bushmen formerly extended further east into Southern Rhodesia and over the rest of the Union, but have virtually disappeared from those parts.

The territory over which the two peoples are now scattered presents a solid land mass, covering an area of approximately 915,000 square

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¹ L. Schultze, *Zur Kenntnis des Körpers der Hottentotten und Buschmänner*, 1928, p. 211. The term is compounded of the names *Khoi-Khoi*, by which the Hottentots call themselves, and *San*, applied by the Hottentots to the Bushmen. The latter have no collective name of their own.

6 THE COUNTRY OF THE KHOISAN

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miles, without peninsulas of any size or any large islands off its coasts.¹ By far the greater part has an elevation of over 3,000 feet above the sea, while the area below 1,500 feet is merely a narrow fringe round the coast. Most of the interior consists of a high plateau region, rising gradually around its borders and passing by degrees into an encircling belt of much diversified country. The escarpment which bounds it on the south-east, south, and west is constituted by the Drakensberg Mountains of the Transvaal, the Drakensberg or Quathlamba of Natal and the Transkei, the Stormberg of the north-eastern Cape Province, the Sneeuwberg, Nieuweveld, Roggeveld, and Kamiesberg further south and west, and is continued northwards under less well-known names to beyond the Kunene River. These mountains appear to be of no great height when viewed from the interior plateau, but on the seaward side they fall steeply, though rather irregularly, to the much lower level of country on the west and south.

On the west, as far south as the Olifants River, the escarpment is separated from the ocean by slopes of a more uniform nature, but in the south the Great Karroo and long ranges of fold-mountains (the Cape Folded Belt) intervene between it and the coast. The coastline on the west is generally low, almost unbroken by bays or promontories, and beaten all the year round by a heavy surf; on the south there are several prominent headlands, which, however, afford little protection to ships. The only good natural harbour of any size is Saldanha Bay in the south-west, but at Walvis Bay, Table Bay, Algoa Bay and other places ports have been constructed.

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The general characteristics of the climate are determined more by the physical conformation of the land than by proximity to the equator. The eastern escarpments of the high plateau intercept the rain-bearing winds from the Indian Ocean, so that over the greater part of the interior the rainfall is slight (5 to 24 inches). This, added to the elevation of the land, makes the climate in general dry, bracing, and suitable for Europeans, notwithstanding the fact that the northern part of the country is within the tropics. Owing to the gradual increase of altitude from the coast to the interior, there is a remarkable uniformity of mean annual temperature over the greater part of the region: at

¹ The description given above is compiled mainly from the following sources: S. Passarge, *Südafrika*, 1908, chaps. iii-xv *passim*; L. Schultze, "Südwestafrika," in *Das Deutsche Kolonialreich*, 1910 (ed. H. Meyer), vol. ii, pp. 129-298; *The Oxford Survey of the British Empire*, 1914, vol. on "Africa", chaps. i-v; *Official Year Book of the Union of South Africa*, No. 9, 1928, esp. chaps. ii and xxvii; *The South and East African Year Book and Guide* (ed. A. S. Brown and G. G. Brown), 1929 edition, pp. 85-98 and *passim*.

2: Schapera E-4, 5 (no date) 1930

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Bushman FX10

GENERAL FEATURES

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very many places, irrespective of latitude or longitude, it is very close to 63° F., which is also the mean for the entire area. The difference between mean summer and mean winter temperatures is, however, considerable, increasing from the coast inland, while the daily range of temperature is also generally great. Frosts are common on the plateau during winter. H B 132

By far the greater part of the country receives the bulk of its rainfall in summer. The winter rainfall area is confined to a comparatively narrow strip parallel with the west coast, and the constant rainfall area to a much smaller belt in the south. Generally speaking the amount of precipitation decreases from east to west, with areas of heavier rainfall along the south coast and in the south-west. The average annual rainfall of about 24 inches is fairly regular all over the eastern half of South Africa, reaching a maximum of 40 inches in Zululand, and diminishing gradually along the south coast to rise again in the Cape Peninsula. It rapidly falls to 10 inches in the south-western Karroo, from which there is a steady decrease towards the north-west in South-West Africa, but the mean value is again approached in Angola and in the northern and eastern Kalahari.

This contrast in the amount and incidence of the rainfall tends to explain very largely the lack in correspondence of the principal river-systems in the south and west respectively. On the west the rivers are few, and only the Kunene, Orange, Olifants, and Berg are perennial, of which the first two, the largest, not only rise within centres of high rainfall, but also receive no important contributions throughout the lower part of their courses. In the south, owing to the moderately high winter rainfall, the smaller rivers rarely cease flowing, but all the important ones, such as the Gouritz, Gamtoos, and Sundays, actually originate in the interior region of summer rains behind the coast ranges and pass through the latter to the sea by means of deep gorges. They receive insufficient water in their courses across the Folded Belt to maintain a constant flow at all seasons, and in times of drought may become a series of pools. H B 133

Since most of the larger rivers rise upon the interior plateau, their gradients, over stretches, are high; sometimes there are waterfalls, such as the Rua Cana on the Kunene and the Aughrabies on the Orange, while rocky bars or rapids may occur in their channels within the coastal belt or just before it is reached. In consequence of this great slope, and of the intermittent supply of water, none of the rivers is navigable beyond its estuary. The mouths of the rivers

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are always obstructed by sand bars, and most of the rivers are further liable to receive sudden freshets, which sweep down with great force and render the fords impassable until they have subsided.

NATURAL DIVISIONS AND VEGETATION

The Interior Plateau

Topographically the interior plateau can be divided up into several regions, more or less sharply defined from one another by the shape and character of the surface and by the climate. Its heart is constituted by the Kalahari Desert, a huge sand and bush-covered plain standing at an average elevation of 3,000 to 3,500 feet above the sea, and devoid of running water except in the extreme north. The greater part of this plain forms the western portion of Bechuanaland Protectorate, but it spreads south into that part of Bechuanaland annexed to the Cape and west into South-West Africa. The Orange River may be taken as marking its southern limit; westwards it reaches to the foot of the Nama and Damara highlands of South-West Africa, eastwards to the cultivated parts of Bechuanaland, and northwards to the Congo-Zambesi watershed, embracing the valley of the Okavango and the bed of Lake Ngami.

The Kalahari as a whole is arid and scored by the beds of dried-up rivers. Its surface is thickly covered with red sand and calcareous deposits, through which the basement rocks seldom show. In a few places, however, they project abruptly above the plains in the form of isolated bare hills, which though not high are conspicuous on account of the monotonous regularity of the surface from which they arise. The ground is undulating and is thrown up towards the west into extensive belts of parallel sand dunes, in part, however, fixed by vegetation, which cover a great portion of the country in the south and stretch with interruptions to beyond Lake Ngami.

Throughout the Desert there are extensive mud flats, which after heavy rains become pans and lakes of shallow water, and water is then also found in mud-bottomed pools along the beds of rivers. All over the country numerous small pans or vleis also occur in crater-like depressions where the rock rises above the desert sands. The water in these pans is often brackish and in some cases thickly encrusted with salt. The native routes lead from pan to pan, or from one waterhole in the bed of a sandy river to another. During the dry season the lack of water is so widespread in the Southern

NATURAL DIVISIONS AND VEGETATION 9

and Middle Kalahari that it is scarcely possible to traverse parts of the country, and many routes can only be followed at such times as the pools have been filled by recent rain.

The winter climate is delightful. The heat during the other months is great, but there are occasional short, sudden, and therefore treacherous changes from extreme heat to cold. Malarial fever is prevalent, being particularly severe in the neighbourhood of the water-courses and other low-lying places, where during and immediately after the season of the heavy rains the dense bush, thick undergrowth, and rank vegetation afford excellent shelter to mosquitoes. The rainfall varies from about 8 inches in the south-west to more than 20 inches in the north and east; almost all the rain falls in the summer months, December to April, and chiefly in thunderstorms. Except in the north, none of this rainfall reaches the sea, the water being either evaporated directly or flowing into shallow depressions such as Lake Ngami and the Great Makarrikarri salt-pan. Over wide areas the country is so flat that the rain drains off partly in one direction, partly in another.

The principal river in the north is the Okavango, which, rising in the Angola highlands, flows into the Okavango marshes, a region about a hundred miles in length and from ten to fifty miles in width. From this reed-choked swamp the river at certain seasons overflows on the north into the Kwando and so reaches the Zambesi, and on the south into Lake Ngami and the Botletle River, which feeds the Makarrikarri depression and the great sandy plains of the north-east. During the rains the whole of this region is covered with wide stretches of water, often extending far beyond the horizon. The Nossob, Molopo, and Kuruman Rivers in the south, which formerly drained the greater part of the Middle and Southern Kalahari into the Orange River, are now for the most part sandy beds bordered with trees, and water is seldom found except towards their heads. At the present time no water leaves this part of the Kalahari except through evaporation. The country appears to be suffering from progressive desiccation, but there is said to be good evidence of an abundant supply of water not far beneath the surface.

The rainfall, though very small in the west and south, enables a fair amount of vegetation to flourish, chiefly grasses, shrubs, and trees, except in certain areas where the soil is too saline. The great plains, more especially in the south, are covered with tough sun-bleached Bushman grass (*Aristida brevifolia*), growing knee-high and giving

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NATURAL DIVISIONS AND VEGETATION II

Northern Damaraland to the south of the Karst region is a tract of extensive grass plains, from which emerge isolated eminences and a few mountain chains superimposed on the main plateau. Further south the whole country attains its highest elevation of over 6,000 feet in the Khomashochland of Windhoek district, while south and east of Windhoek rise the great Auas Mountains (highest altitude 7,886 feet), which form the watershed of South-West Africa. Deep clefts and gorges, widely-extended plains and high rugged peaks are characteristic of this region; valleys, too, expand in among the mountain groups, and are often of extreme fertility. To the south succeed the plateaus and table-topped mountains of Great Namaqualand. This part of the country is dominated by two longitudinal trenches, that of the Konkip to the west, that of the Great Fish River to the east. West of the former is a series of mountain ranges and elevated plains, among them being the Tsaras and Tiras Mountains and the Huib plateau, while to the east of it is the Hanam plateau. Still further east, beyond the Great Fish River, the Urinanib plateau overlooks the Kalahari. In the south-east the isolated Great and Little Karas Mountains rise to considerable heights, but the country is for the greater part flat or rolling. Eastward and north-east of these elevated tracts, the upland assumes a very level character, composed mainly of sand dune formation merging eventually everywhere into the sandveld of the Kalahari.

Although the northern half of South-West Africa falls within the Tropic of Capricorn, the climate is on the whole temperate rather than tropical. The extreme north and north-east are hot and trying to Europeans, and malaria is very prevalent there during the autumn; but on the central plateau the dryness of the air makes the summer heat easily supportable, and the country generally is healthy, with clear, bracing atmosphere and much wind. The winters are cold, and ice often forms upon the central and southern plateaus. Rain falls during the summer from October to April, but rarely during the winter season. The mean annual rainfall varies with the latitude, from 6 inches in the south to 12 inches in the centre and reaching 22 inches in the north.

Except for those rivers forming part of the northern and southern frontiers of the country—the Kunene, Okavango, and Orange—there are practically none which carry surface water all the year round. Almost all are simply dry sandy watercourses which become torrents for a short period after rain; but save in very wet seasons few of these

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● 133 flow for any considerable distance. For the rest of the time they have water only below the bed or in pools. Away from these sandy beds water as a rule is extremely hard to find. After heavy rains great hollows in the rocks are filled with water which is a blessing to any traveller passing that way, and there are also vleis and depressions which hold water for a short while. Springs, however, are few and far between, and then generally occur in the river-courses.

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137 Corresponding to the variation in the rainfall there is a variation in the character of the vegetation. In the extreme south for a considerable distance semi-desert conditions prevail, the arid, stony plateaus and plains supporting a sparse growth of grass and small, scrubby bushes, including the different species of *Grevia* which produce the wild berries so much used by all the natives as food. In heavy rainy seasons, however, nutritious grasses and flowers spring up everywhere. The river-courses are clothed with trees, especially the Kameeldoorn (*Acacia giraffae*) and the Kokerboom (*Aloe dichotoma*), and in all of them, too, the South American *Nicotiana glauca* Grah., the wild tobacco plant, is found as a straggly, weedy shrub or tree. Northwards the veld assumes the characteristics of the Karroo until Rehoboth is reached, when it changes into park-like grass country studded with large thorn trees, being especially well timbered along the watercourses. From the mountainous portions of the Windhoek district northwards towards Omaruru the country is covered with level bush with an undergrowth of very nutritious grass, the valleys and watercourses being well wooded mostly with *Acacia* trees, especially the Kameeldoorn. Towards the north the bush becomes denser until it is fairly well timbered all over. In its northernmost section it is traversed by belts of open Mopane forest, and towards the Okavango fertile tropical vegetation is abundant. Numerous kinds of fruits, roots, and tubers used by the natives as food are found over the whole region, but most abundantly in the north. The edible bulbs belong for the most part to the *Iradaceae* family, while the tubers are generally *Asclepiads*, though the *Cyperaceae* and the *Oxalidaceae* also furnish succulent tuber-like growths.

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133 South of the Orange River the rocky western edge of the great interior plateau is extended into the highlands of Little Namaqualand in the Cape Province. With scanty soil and low rainfall (5 to 15 inches) this region shares the characteristics of the southern portion of South-West Africa. Short perennial streams are found in the Kamiesberg, but the mountainous country enclosed by the great bend

2: Schapera E-4, 5 (no date) 1930

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of the Orange River is very dry. The level arid plain of Bushmanland further east is essentially a continuation of the Kalahari, from which it is separated by the deep rocky valley of the Orange River. The summer rainfall is low (5 to 10 inches), increasing gradually from the west eastwards; there is practically no surface water, and the soil is usually bare, stony or sandy. The river-beds are mostly dry throughout the greater part of the year, and the Orange River is the only one that always contains water. The general aspect of the vegetation both here and in Namaqualand is that of widely-separated xerophytic shrubs and bushes, with a fair proportion of succulent plants in the low-lying valleys and on the rocky outcrops. Grasses do not form a conspicuous feature, but they occur on the high plateaus and sandy plains, where the vegetative period is short, and where they always assume a tufted habit.

Further south and east is the Upper or Northern Karroo, an arid tract of country stretching northwards to the Orange River at an elevation of between 2,800 and 6,000 feet above sea-level. It is bounded on the west by the Roggeveld, on the south by the Nieuwveld and Sneeuwberg ranges, which form part of the great escarpment of the interior plateau. The landscape appears for the most part in the form of vast treeless plains, only here and there broken by table-topped hills boldly scarped by sandstone and dolerite sheets, while occasionally dark ridges, the outcrops of inclined sheets of dolerite, are seen traversing the country for many miles.

The region is exposed to great extremes of temperature. Severe frosts are experienced in the winter nights, while the summer heats are correspondingly severe, reaching at times to 110° F. in the shade. The feeling of oppression at such times is increased by the hot westerly winds which predominate during the first half of summer, although the nights are cool even during the periods of greatest heat. The winter days, on the other hand, are very enjoyable, the air being keen and bright with a maximum of sunshine. There is a wide range of rainfall, from less than 5 inches in the north-west to 25 inches in the east; the greater part of this falls in violent summer thunderstorms, and almost all the water runs off the sun-baked soil into deep gullies which hurry it off to the sea. Severe droughts are common, and the streams are all intermittent. The soil is shallow and rock-strewn, except in the alluvial tracts in the valley bottoms, and surface limestone becomes an important feature in the drier parts of the region. Pans are abundant, and a striking feature in the low-grade

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valleys of the north-west are the wide "vloers" of Carnarvon and Calvinia, more or less well-defined flat areas a few miles wide and thinly covered with brackish silt.

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Owing to the great range in rainfall and altitude there is a considerable diversity of conditions in this region. While the north-western parts are little better than desert, the more favoured districts to the south and east are well covered with permanently-occupied farms, although agriculture is restricted to the alluvial tracts. The vegetation is everywhere of a semi-desert character. The greater part of the country supports only a sparse and incomplete covering of shrublets and stunted, skeleton-like bushes, most of which belong to the family *Compositae*. In spite of their unpromising appearance when burnt up by the rays of the summer sun, they afford excellent sustenance for stock even in the driest seasons, and at the present time they provide nourishment to millions of sheep and goats, supporting one of the great wool growing industries of the world. Thorny plants, succulents, bulbous and tuberous plants abound in places, but trees, principally *Acacias*, appear as a rule only along the dry sandy river-beds. Grasses are frequent in the rainy season, but nowhere form the dominant feature of the vegetation.

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The High Veld of the Orange Free State and the Southern Transvaal is essentially an extension eastwards of the Upper Karroo, but has a much better rainfall. Lying for the most part over 5,000 feet above sea-level, and with an invigorating climate, it is perhaps the most favourable region in the Union for a white population. The rainfall ranges from about 20 to 35 inches, and occurs principally during the summer months in thunderstorms. The winters are dry and cold, and severe frosts are by no means uncommon. The streams are often perennial. The country generally presents a most monotonous type of scenery, consisting of vast rolling plains, although as one travels westward towards drier regions the surface becomes flatter or more varied by steep-sided flat-topped hills. It is essentially grass country and for the most part devoid of indigenous trees, except along the river-banks, which are frequently clothed with willows and mimosas; shrubs are found on the koppies, while growing among the grasses are large numbers of bulbous and tuberous plants.

H O 133 The Coastal Regions

The country between the escarpment and the ocean is considerably smaller than the interior plateau, but as regards climate and structure

NATURAL DIVISIONS AND VEGETATION 15

it presents as much diversity. Along the west coast from the Olifants River northwards as far as the Kunene stretches a desolate and barren wilderness, well deserving the name of "Namib" or desert by which it is known in South-West Africa. This arid tract varies in width from 18 miles in the north to about 85 miles towards the south, and the ground-level rises gradually and evenly from the sea to the plateau. The greater part of the surface is covered by drifting sand dunes, which stretch in wave after wave to the horizon; here and there low gravelly hills and ridges of hard rock project through the mantle of sand, while in places gravel plains and sandy flats vary the monotonous billow of the landscape. The belt of dunes is widest and most continuous south of the Swakop, some of them reaching a height of 300 feet and over; further north they are at once much less continuous and much lower, and the country east of them is more broken. The Northern Namib is further distinguished from the Southern by the presence of watercourses which have kept an open channel to the sea.

The cold Benguella current sweeping the coast from the Antarctic is primarily responsible for the aridity of this region. The coast is dominated by cool winds from south and south-west for about 50 miles inland, although there are occasional very hot winds from the east during the dry season. The winds blowing inland over the cold water lose a considerable amount of their moisture, which hangs as a dense mist over the coastal border almost all the year round, but especially heavily in winter. The Namib in consequence is a practically rainless desert, the mean annual rainfall at Walvis Bay, for instance, being 0.3 inches, and at Port Nolloth 2.17 inches. The temperature, lowered by the Antarctic current, is fairly constant. Port Nolloth in the south, with a mean annual temperature of 57.5° , has the least annual range of temperature in South Africa; February the warmest month has a temperature of only 60.1° , while July the coolest month averages 54.2° .

The result of the deficient rainfall is a very scanty, intensely xerophytic vegetation. The plants are stunted and dwarfed, and nowhere form a conspicuous covering to the earth. Here and there considerable areas are almost entirely devoid of vegetation, although along much of the coastal border the wet and heavy sea fog maintains a sparse cover of bush on the sandy ground. From about 25 miles inland the landscape is characterized by such plants as the milk bush (*Euphorbia*) and cacti, while towards the east, in years of abundant rainfall, the country is fairly well grassed. In the river beds rich

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[23] verdure may be found, such as various Acacias, the principal of which are the Kameeldoorn (*Acacia giraffae*) and the Ana (*Acacia albida*). The leaves and pods of the latter provide the staple food for the cattle, sheep and goats in these parts. Other characteristic vegetable growths are the inflammable candle bush (*Sarcocaulon Burmanni*) and, in the area inland from Walvis Bay, the famous Inaras (*Acanthosicyos horrida Welw.*), a leafless cucurbitaceous plant with an edible melon-like fruit which when in season forms practically the sole article of diet of the natives. In one or two spots is found the most remarkable of all, the unique gymnosperm, *Welwitschia mirabilis*, which during a long lifetime produces only two pairs of leaves.

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[37] At the Olifants River commences another tract of country, characterized by mountains of the folded type, which extend in parallel ranges, separated by wide valleys, over the whole southern portion of the Cape Province as far east as Humansdorp. From the narrow coastal strip fringing this tract the ground rises more or less abruptly to the mountains of the Folded Belt. To the west the rise is gradual through the fertile Goudini valley of Worcester district; further eastward the vegetation and climate partake more and more of the Karroo character, the Oudtshoorn valley and the many kloofs to the east being generally known as the Southern Karroo. The scenery here rapidly changes to bare uninteresting veld, traversed by deep gullies which are generally dry in the summer. In all directions the landscape is bounded by barren-looking mountains, whose steep, rocky sides appear from a distance to be entirely destitute of vegetation. Nothing can exceed the contrast between the scenery on the opposite slopes of the coast ranges: the traveller from the south, after ascending through luxuriant vegetation, frequently clothed in mist, emerges suddenly into a region of precipices and rocks, where rain may not have fallen for months. The soil in the valleys, however, is fertile when it can be brought under irrigation.

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132 The total annual rainfall is by no means deficient, the average for the region being about 29.5 inches, although it varies greatly according to locality. The average for the Cape Peninsula is 40 inches, most of it falling on the eastern side of Table Mountain. Immediately to the east of Cape Town and as far as Knysna there is a decrease to between 15 and 20 inches. The rainfall then becomes more abundant, the well-wooded Knysna itself being one of the best-watered districts of South Africa, with an average rainfall of 40 inches. Further inland, except on the mountain slopes, the rainfall is much less, and the range

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of temperature is somewhat greater. Most of the rains fall during the winter (April to September), when the temperature, though mild, is still relatively low. The summer is the dry season, and long droughts regularly recur. H
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These climatic conditions have resulted in the production of a peculiar and characteristic type of vegetation. The dominant plants are evergreen shrubs some three to six feet high, usually with small, stiff, leathery leaves. Between the shrubs are many smaller plants, numbers of which possess bulbs, tubers or other subterranean organs storing up quantities of water and food substances. The sandy plains support a dwarf, heath-like vegetation, while the marshy hollows, the stream margins, mountain ravines and mountain summits all possess their own peculiar plant forms. The families characteristic of this region include the *Proteaceae*, to which belong many of the evergreen shrubs, among them the well-known silver tree (*Leucadendron argenteum*) of the Cape Peninsula and the sugar bush (*Protea mellifera*); the *Restionaceae*, a family of grass-like plants which largely take the place of true grasses in this region, though many of the latter occur as well; and the *Ericaceae* (heath family), which are very numerous and often strikingly beautiful. Forest patches are found in the kloofs and seaward sides of the mountains, the largest area of more or less continuous forest in the Union lying between the Outeniqua Mountains and the sea, extending from George through Knysna to the Humansdorp district. They are composed almost entirely of high timber trees, the more common being species of yellow wood, cedar, ebony, stinkwood, ironwood, and sneezewood. H
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The last natural region with which we are concerned is the Central or Great Karroo of the Cape Province. Lying at a level of from 1,500 to 3,000 feet above the sea, it stretches as a gently-undulating plain from the foot-hills of the Folded Belt to the mountains forming part of the great escarpment in the north. On the west it extends to the valley of the Olifants River, while in the east the Sundays River may be taken as marking its limit. The mountains of the Folded Belt rob the rain-bearing winds from the sea of their moisture, and so give rise to the aridity of this region. The rainfall is scanty, the annual mean being less than 5 inches in the west, although it increases to 15 inches in the centre and east. The surface soil is shallow, hard, and compact; the river-courses are dry, except during the brief periods of rainfall in the summer, when the bulk of the water is rushed off immediately to the sea. In the dry season the whole region presents H
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a most desolate appearance. Verdure is entirely wanting, the numerous gullies are empty, and the low ranges of ironstone koppies which dot the plains seem to reflect the heat as from a mirror. The vegetation is composed very largely of drought-resisting thorn bushes, succulents, bulbous and tuberous plants. Grasses appear only in exceptionally wet years, while trees are usually absent, except along the dry river-courses and on the mountain slopes in the east, where the rainfall is highest. Till the early years of the nineteenth century the Great Karroo was regarded as a desert unfit for man or beast; since then well-sinking and donkey transport have bettered the conditions, and the region has gradually become occupied.

FAUNA

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The great variety of habitat provided by the country taken as a whole has naturally favoured the development of a varied and abundant fauna.¹ South Africa has long been renowned for the wealth of its larger forms of animal life, although with the advance of European settlement and colonization the numbers have been rapidly reduced, particularly of certain classes of big game. The native inhabitants had certainly done something to reduce the numbers and affect the distribution of the fauna, but a balance had been reached which still left the country richly stocked. The Cape was full of game when the first European settlers established themselves there 250 years ago, and in their gradual spread inland the white men found the same abundance of fine forms of animal life in each new tract of country that they entered. A few decades were enough to convert each newly-opened district from a hunter's paradise into a stock-farming country, and the increase of veld-burning carried the destruction into other zones of life. But over large parts of South Africa the face of the country itself has been little changed on the whole, and a good deal of the original fauna has survived, even on much of the enclosed land.

The mammalian fauna is, or rather was, characterized by the great abundance and variety of antelopes, the presence of such remarkable "living fossils" as the elephant, giraffe, rhinoceros, hippopotamus, and aardvark, as well as of the buffalo, zebra, and quagga, and the abundance of carnivora, large and small. During the eighteenth

¹ An excellent short account is given by Dr. E. L. Gill, "Descriptive Sketch of the Fauna of South Africa," *Official Year Book of the Union*, No. 9, pp. 31-41. Cf. also Passarge, *op. cit.*, pp. 78-86.

2: Schapera

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FX13 Hottentot

Bushmen FX10

Map II "The Khoisan Peoples of South Africa," has been reproduced for the files in the following manner:

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Bushmen FX10



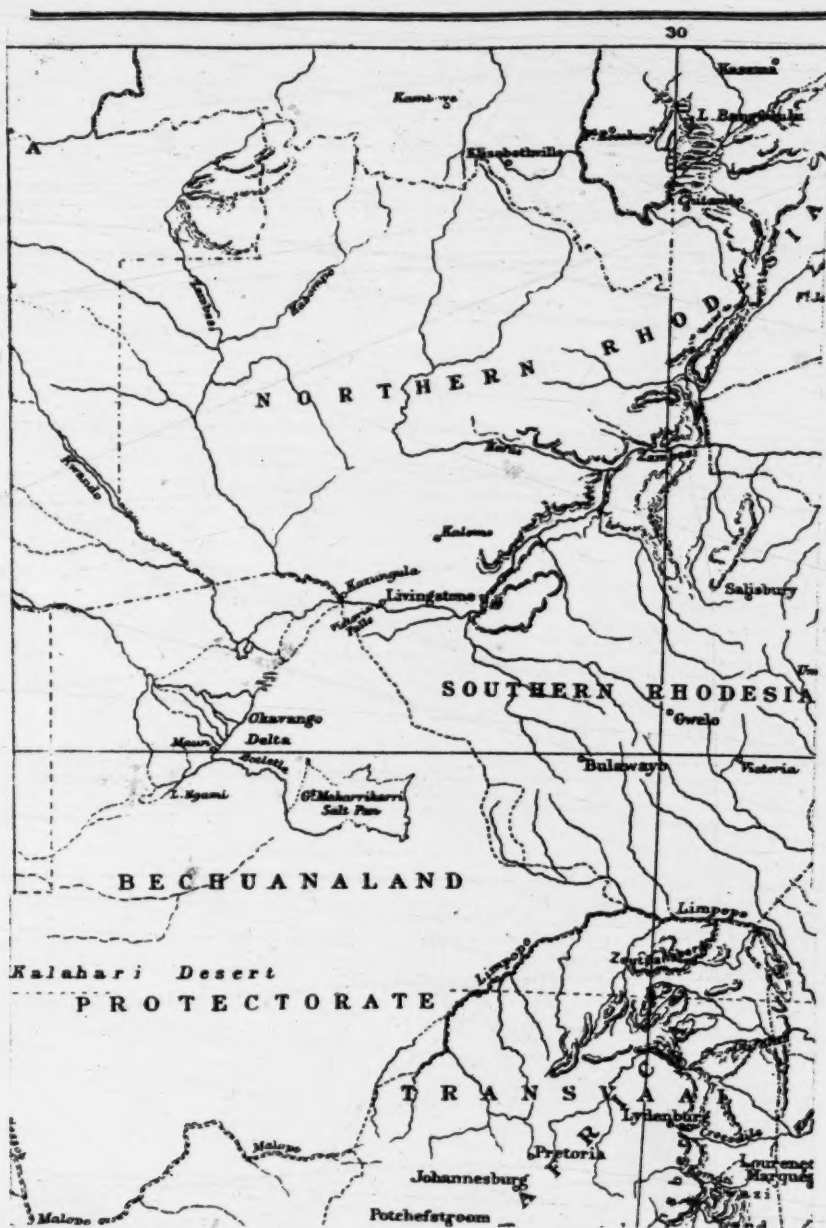
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ПАР II A]

2: Schapera E-4, 5 (no date) 1930

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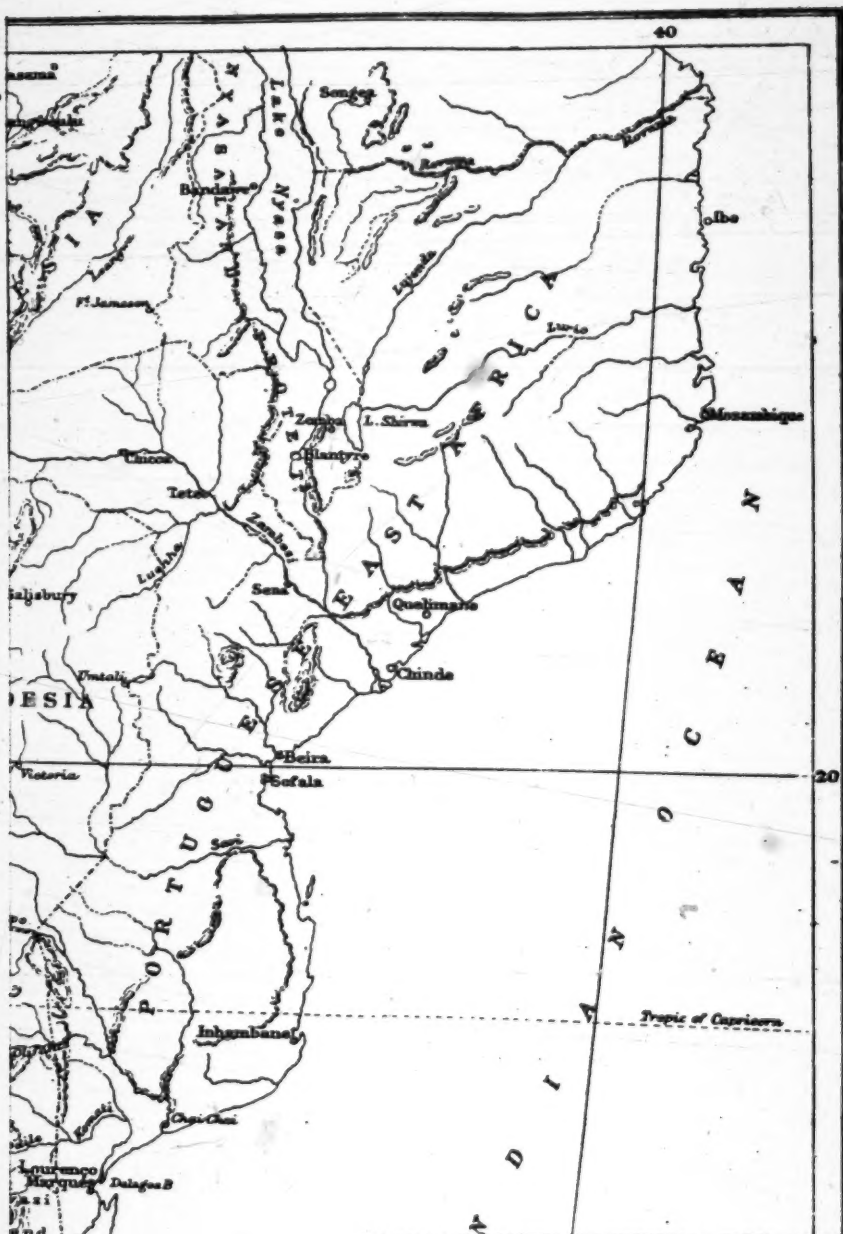


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MAP II B]

2: Schapera E-4, 5 (no date) 1930

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MAP II C]

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MAP II D]

2: Schapera E-4, 5 (no date) 1930

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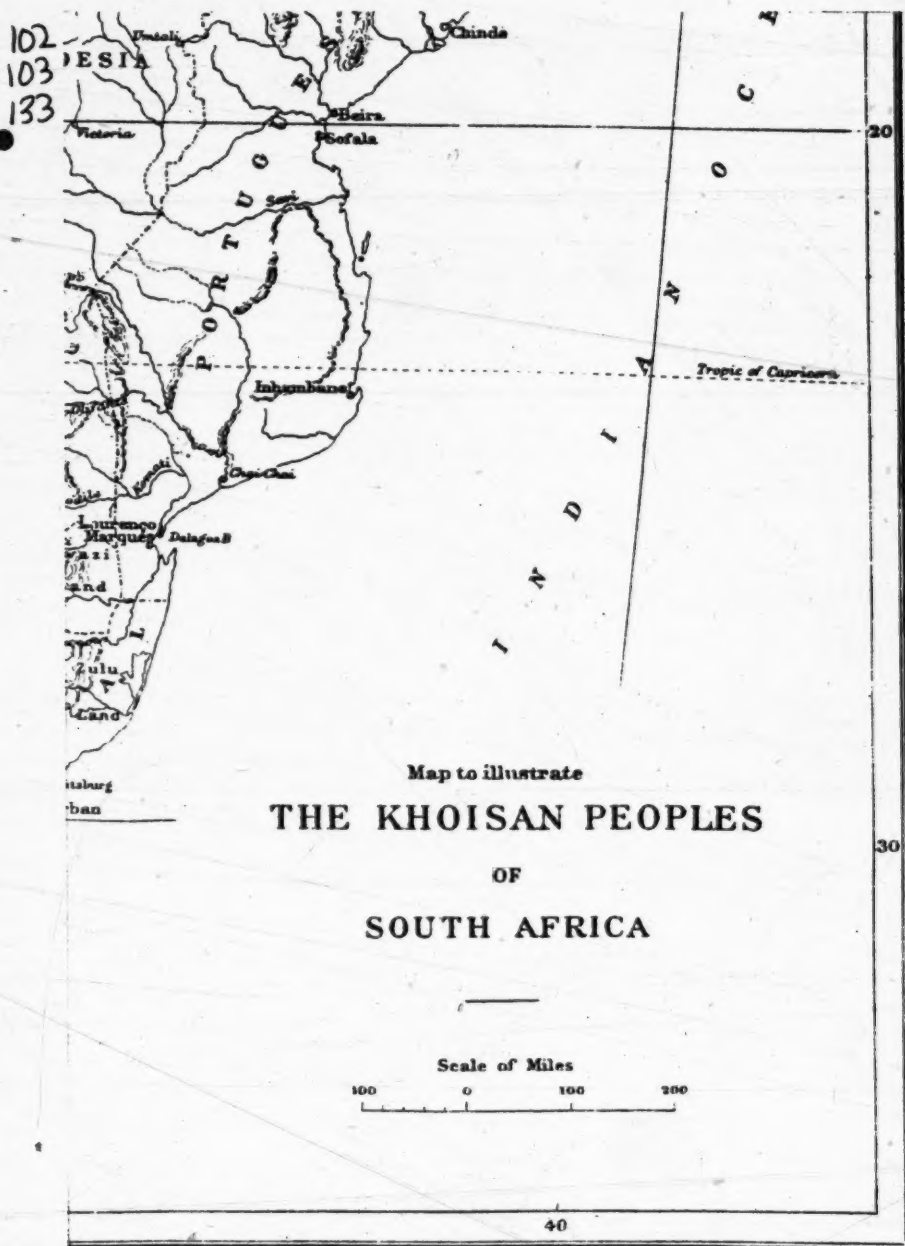
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MAP II E]

2: Schapera E-4, 5 (no date) 1930

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MAP II F]